Clinical Medicine

Original Articles for October, 1959

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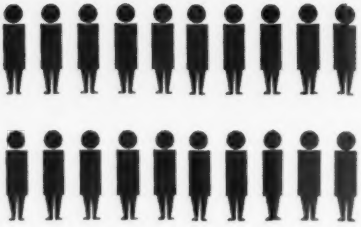

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1. Brit. M. J. 1:407, 1952. 2. Bull. Margaret Hague Mat. Hosp. 1:68, 1948. 3. Am. J. Obst. & Gyn. 57:541, 1949. 4. Connecticut M.J. 14:930, 1950. 5. J.-Lancet 66:218, 1946. 6. Am. J. Obst. & Gyn. 62:947, 1951. 7. Am. J. Med. Sc. 212:76, 1946. 8. Obst. & Gynec. 5:201, 1955. 9. J. Fed. 41:170, 1952. 10. Ann. Int. Med. 42:458, 1955.

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Clinical Medicine

Original Articles for October, 1959

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Clinical Medicine

Vol. VI, No. 10

CONTENTS FOR OCTOBER, 1959

Editorial

Original Articles

...threatened abortion

...habitual abortion

...endometriosis

ENOVID®

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Thus, its administration is free of risks of virilism even on long-term administration at high dosage.

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5. Is not androgenic[1] in experimental animals.
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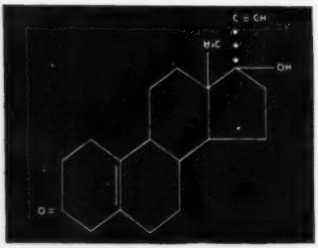

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G. D. SEARLE & Co., Chicago 80, Illinois
Research in the Service of Medicine.

1. Symposium on New Steroid Compounds with Progestational Activity, Ann. New York Acad. Sc. 71:483-805 (July 30) 1958.
2. Edgren, R. A.: The Uterine Growth-Stimulating Activities of 17α-Ethynyl-17-Hydroxy-5(10)-Estren-3-One (Norethynodrel) and 17α-Ethynyl-19-Nortestosterone, Endocrinology 62:689 (May) 1958. 3. Rakoff, A. E.: Pages 800-805 of reference 1.
4. Tyler, E. T., and Olson, H. J.: Pages 704-709 of reference 1. 5. Kistner, R. W., Endometriosis, in Conn, H. F. (editor): Current Therapy—1959, Philadelphia, W. B. Saunders Company, 1959, pp. 610-612.

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Original Articles

Current Literature

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Current Literature

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EDITORIAL

More on the Absurdity of Expecting the Average Life to be Further Materially Prolonged

More people are surviving the childhood diseases and benefiting from many recent advances in preventive medicine

JAMES M. NORTHINGTON, M.D., *Editor-in-Chief*

More than two years ago I wrote n editorial in this journal to the fol-wing effect: Writers frequently ate that within a few more decades e average human life expectancy ill be as high as one hundred years. he increase in life expectancy, about hich so much is now being written, as been brought about by the sav-g of life in infancy and childhood. ifty years ago it was commonly id that two out of three breast-fed abies lived, and that two out of ree bottle-fed babies died. It was so said that a widower was like a aby in that, "He cried the first six onths, the next six months he began to take notice, and it was mighty hard to get him through the second summer." There has been a great change in the survival rate of the babies, and probably also in that of the widowers. Five thousand years ago an acute observer remarked, "The days of our years are three score and ten, and if by reason of strength they be four score years, then is their strength labour and sorrow." Note that this is said of those already arrived at man's estate. It seems likely that the "labour and sorrow" of the ten years after seventy was mostly from prostatic troubles, for which nothing could be done until thousands

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of years later.

Several months ago, while looking through a volume of *The Best of the World's Classics*, published in 1905 and edited by Henry Cabot, the stateman of that name of that day, it occurred to me that the writers of these Classics lived to be rather old. This led to the discovery that these writers lived, on an average, sixty-five and a half years, between 354 A.D. and 1905 A.D.

It then occurred to me to consult another series in my library to find out how old the greatest in another field got to be. Covering the past 432 B.C. to 1906 A.D., I learned that the average life span of those regarded as the greatest statesmen and orators was 59.9 years. It is to be noted that this record was made after the appearance of the historically devastating epidemic diseases, bubonic plague, cholera, small-pox, typhus, malaria, diphtheria, typhoid and influenza. Taking the deaths from these epidemics into consideration it is remarkable how close the agreement is with the "three score years and ten" of the Hebrew Psalmist.

How can one ignore the abundant evidence all around us testifying to the fact that everything that lives—man, other animals, and plants—has a fairly definite period of years, months or days of growth, a period of maintenance at a certain level, then a period of decline to death? How can we escape the conclusion that the attainment of an average of one hundred years would be the greatest calamity that ever befell the world? However good our intentions, there would not be enough persons in the productive age to feed, clothe, house and minister to the young in non-age and to the old in dotage.

The life span of the presidents of the United States is worthy of consideration. The oldest at the time of death was John Adams who, born October 30, 1735, died July 4, 1826 at age 90. On the same day of that year at age 83, Thomas Jefferson died. It is a remarkable coincidence that these two men who had done so much to make July 4th a memorable day should both die on the 50th anniversary of the Declaration of Independence of the United States. From McGill's "History of Virginia," a textbook of my childhood, I learned that almost with his expiring breath "John Adams said, 'Thomas Jefferson still survives,' but Jefferson lay dead at that hour at Monticello."

An examination of the ages of the presidents at the time of death shows that the average age of the first 10, Washington to Tyler, was 77.4 years. This high figure results from having in the list not only the 90-year-old John Adams, but three octogenarians—Jefferson who died at 83, Madison at 85, and John Quincy Adams at 80. And two others of the 10 were near 80—Jackson was 78 and Van Buren 79. Washington at 67 and William Henry Harrison at 68 were the only two who died before they were 70 years of age.

By comparison, the last 10 presidents who died from natural causes (Presidents Garfield and McKinley were assassinated) were short-lived, the average age being 64.3 years. President Taft was the oldest in this group, being 72 at the time of death. Hayes and Cleveland, 70 and 71 respectively at time of death, were the only ones besides Taft to reach the three-score-and-ten mark. Chester A. Arthur died at 56 and Warren G. Harding at 57.

Of the presidents from James K. Polk, inaugurated in 1845, to U. S. Grant, who served two terms, from 1869 to 1877, excluding Abraham Lincoln who was assassinated in 1865, the seven others had an average age at time of death of 66 years. The oldest of the group was James Buchanan, who was 77; the youngest was Polk who died at 53. Polk had the shortest life span of any of the presidents. Thus, these seven occupy an intermediate place, their average age being 1.7 years more than the last 10 and 11.4 years less than the first 10 presidents.

It is true that the number in each group is too small from which to draw any firm conclusions; still the difference of more than 13 years between the average age of the first 10 and of the last 10 presidents at time of death encourages speculation as to possible causes for the difference. Question has been raised as to whether the increased responsibilities of the office are such a burden as to shorten life; whether the earlier presidents represented a tougher race; or if accident gave us as the first 10 presidents persons whose natural life span was longer than that of those in the second and in the last group. It is well established that longevity is an inherited characteristic. Oliver Wendell Holmes, poet, essayist, doctor of medicine and octogenarian, advised as a way of assuring a long life picking out old grandparents. He is quoted as having used these words: "The first thing to be done is some years before birth, to advertise for parents belonging to long-lived families."

The greater longevity of the first 10 presidents is, at first blush, striking in view of the fact that life expectancy in the United States has increased by 20 years in the last half century. But this is due almost entirely to advances in the prevention and treatment of infectious diseases and the lessened infant mortality, and so more people have lived to suffer from the deterioration natural to later life. The lives of some in the older age groups are prolonged by modern treatment. Thus, an old person with bronchopneumonia, called by Osler "the friend of the aged, cutting off the cold gradations of decay," would have a somewhat better chance of recovery now than 100 years ago. We may rest assured that the earlier presidents' long life span was not due to what foolish people assume to have been the freedom from stress and strain of those times as contrasted with the present Atomic Age.◀

Localized Infections: Treatment with Triacetyloleandomycin

Of 66 patients, receiving (TAO) triacetyloleandomycin after resistance had developed to other antibiotics, 43 had soft tissue infection, 11 ear or respiratory tract infection, 6 genitourinary infection, and 6 other infections. Most cultures revealed Micrococcus pyogenes. Administration depended on the severity of the infection and the condition of the patient, and varied from 1.2 to 1.5 gm. in daily divided doses. Duration of treatment ranged from three to 15 days. Response in general was excellent in almost all cases, some patients showing reversal of symptoms within 24 to 48 hours. In 54 cases response was classified as good, in 10 fair, and in 2 poor.

Lefebre, M. et al., *Canad. M.A.J.*, 80:346-350,1959.

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*Hirsch, H. A., and Finland,
New England J.
260:1099 (May 28)

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ORIGINAL ARTICLE

Deaner,* A New Stimulant for Office Practice

The subtle action of this psychotropic drug is useful in treating mildly depressed office patients

Z. O. YOUNG, M.D., *Sacramento, California*

How shall I treat my depressed office patients? In my experience, tranquilizers (rauwolfia products, phenothiazines, meprobamate) have often aggravated depression. The amphetamines, while sometimes effective in elevating the mood, increase and/or produce nervousness, insomnia, excessive motor activity, heart rate and anorexia. Side effects of the monoamine oxidase inhibitors, such as postural hypotension, syncope and occasionally toxic hepatitis seem too severe to justify their use in mild depression.

A new type of psychic stimulant, deanol* (para-acetamidobenzoic acid salt of 2-dimethylaminoethanol) has become recently available. Its action is reported to depend on conversion within the brain cells to acetylcholine, which facilitates neuron activity.[1] I have used this agent in my office patients and obtained good results in the treatment of mild depression and fatigue states.

CLINICAL MATERIAL AND METHOD

In order to minimize suggestion and unconscious motivation, I carefully selected for this study 54 patients whose psychological pattern was well known to me. Of these, 36 were psychoneurotic, 18 schizophrenic or borderline schizophrenic. Their

*Deaner,® Riker Laboratories, Inc., Northridge, Calif.

1. Pfeiffer, C. C., et al., *Science*, 126:610,1957.

FOUND:
a dependable
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commonest
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office problem"

"VULVOVAGINITIS, CAUSED BY TRICHOMONAS VAGINALIS, CANDIDA ALBICANS, Haemophilus vaginalis, or other bacteria, is still the commonest gynecologic office problem . . . cases of chronic or mixed infection are often extremely difficult to cure." Among 75 patients with vulvovaginitis caused by one or more of these pathogens, TRICOFURON IMPROVED cleared symptoms in 70; virtually all were severe, chronic infections which had persisted despite previous therapy with other agents. "Permanent cure by both laboratory and clinical criteria was achieved in 56. . . ."

Ensey, J. E.: Am. J. Obst. 77:155, 1959

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TABLE 1

RESULTS OF TREATMENT WITH DEANOL

Indications	No. of Patients*	Average daily maintenance Dosage (daily)	Results			Side Effects
			Good	Fair	Poor	
Depression	37	25 mg. 3 50 mg. 4 100 mg. 15 150 mg. 2 200 mg. 5 300 mg. 2 600 mg. 3 800 mg. 3	17	13	7	Muscle tension—2 Ache in extremity—1 Rectal itching—1 Itching—1 Increased day dreaming—1
Chronic fatigue	6	150 mg. 1 100 mg. 5	2	3	1	
Headache tension or relaxation	3	50 mg. 1 100 mg. 1 200 mg. 1	2		1	
Withdrawal	6	200 mg. 1 100 mg. 3 150 mg. 1 250 mg. 1	1		5	Hyperactivity—1 Dizziness—1
Anxiety	4	75 mg. 3 25 mg. 1			4	Tenseness & Nervousness—4
Retarded & negativistic	1	25 mg.			1	
Aggressive child	1	50 mg.			1	
Retarded learning	2	100 mg. 1 150 mg. 1	1		1	
Inadequate trial	3	25 mg. 2 100 mg. 1			3	Skin rash—1 Depression—1
Total	63		23	16	24	Diarrhea—1

*54 patients used altogether, some having more than one symptom as categorized above.

chief complaints were depression, chronic fatigue and headaches. The starting daily dose of 25 or 50 mg. was increased at 3-day intervals by 25 or 50 mg. until 100 mg. per day was being given. If this was well tolerated and improvement was insufficient, the daily dose was further increased by 100 mg. every three days, until significant improvement appeared or a dose of 800 mg. was attained. The average daily maintenance dose was 100 mg., but a number of the patients preferred 300 to 600 mg.

RESULTS

In determining results the following criteria were used: "good," improvement in symptoms sufficient to warrant continuation of therapy; "fair," some improvement, but insufficient to indicate continued medication with the drug, especially if the patient had to purchase it; and "poor," when the patient seemed to obtain no benefit.

The results seemed to be more closely related to symptoms than to diagnosis (Table 1). Good to fair results were obtained in 30 of the 37 patients with depression and in 5 of the 6 patients with chronic fatigue. Good results were obtained in 2 of 3 patients with chronic tension headaches. The response of four patients with anxiety was poor, all reporting increased tension and nervousness.

On the basis of our experience in these and other patients it appears that the three most useful antidepressants are a combination of an amphetamine and a barbiturate, iproniazid, and deanol. The amphetamines produced a more rapid and definite response, but the patients complained of a tendency to feel exhilarated, restless, or irritable. In some cases, the barbiturate satisfactorily neutralized this effect, but in others it had an excitatory action. Deanol proved more satisfactory than the barbiturate. Iproniazid seemed to be preferred by the more severely depressed and fatigued individuals. However, two such patients considered unsatisfactory subjects for the use of iproniazid, because they had had severe hepatitis with residual liver damage, improved on deanol with no evidence of impairment of liver function. Compared to iproniazid, which usually required a week to several weeks to produce results, deanol often effected a response in the first few days of treatment.

ILLUSTRATIVE CASES

Several cases are briefly summarized to indicate the favorable response in patients with the symptoms investigated.

Case 1

A 36-year-old white man complained of excessive back pain, fatigue and frequent severe headaches following an industrial injury. On 100 mg. of deanol daily, he reported his headaches had stopped. On 200 mg. daily, he felt less tension and was optimistic. His back pain seemed unchanged, but he felt less helpless and depressed over it. Two months after beginning therapy, his mood remained improved and he was withstanding increased stress due to family tensions. By the fourth month of treatment, he had responded to psychotherapy sufficiently to return to work with a minimum of back pain. I feel that the drug was helpful in re-establishing a pattern of optimism and energy in this patient and that it was a valuable adjunct to psychotherapy.

Case 2

A white woman of 34 had neurotic complaints of headaches, irritability and tearfulness. She noted marked improvement on 100 mg. deanol per day. Although the headaches continued to occur, they were much milder. Deanol improved her mood and helped her to utilize psychotherapy more effectively.

Case 3

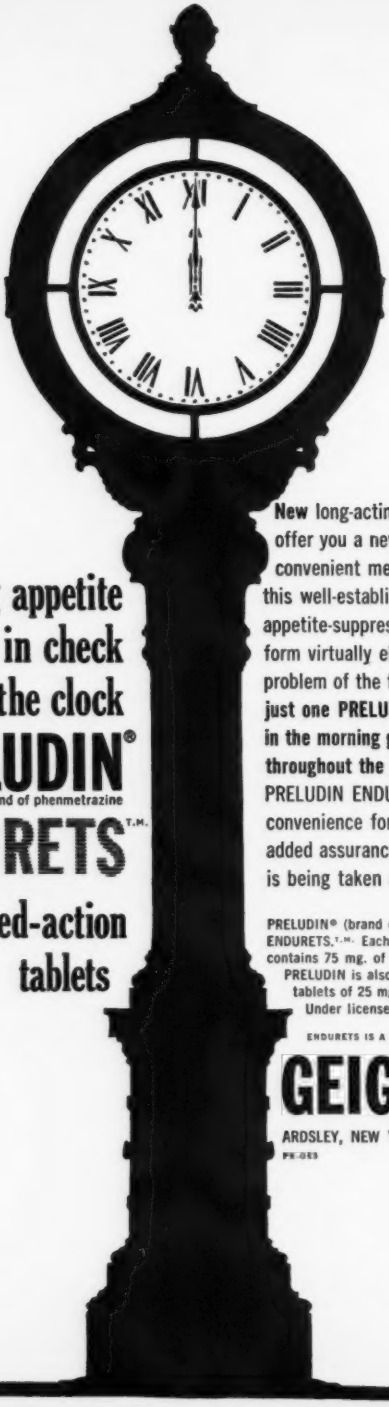
A white woman of 22 had a severe neurotic reaction bordering on schizophrenia. She showed considerable hostility, a feeling of unworthiness and depression with suicidal tendencies. This unhappy young woman began to show improvement in mood when her dose reached 150 mg. per day. After two months of treatment, she seemed much more cheerful and was more productive during psychotherapy, which had been hampered by her attitude of hopelessness. She had more self-reliance and self-respect. Four months after beginning medication she stopped taking it to note the effect, whereupon she felt renewed discouragement. When the medication was resumed, she noted definite benefit again. This patient tried various doses up to 800 mg. per day and stated that she seemed to derive the most benefit at 600 mg. per day.

Case 4

A white boy of 6½ complained of being sleepy after waking and of being tired and irritable in the morning. This interfered with his school performance with respect to both learning and sociability. On 50 mg. of Deanol per day, the child showed increased energy and enthusiasm. He woke up in the morning cheerful and energetic and showed improvement in concentration and perseverance. When the drug was stopped after two months, there was a relapse to the previous pattern; when medication was reinstituted at an increased dose of 100 mg. per day, there was renewed improvement.

SIDE EFFECTS

During this study 6,500 tablets of deanol (100 mg.) were dispensed without undesirable side effects. Those noted in Table 1 were apparently related to the stimulating effect of this agent. Although a skin rash was reported in one patient, it is



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doubtful whether this was caused by the medication. The single case of diarrhea may have been from intestinal influenza rather than the drug. An attempt to establish a causal relationship met with a refusal by the patient to take a second course of the medication. One woman who usually repressed any free flow of ideas and conversation complained of excessive day-dreaming, which was manifested in the form of increased mental activity resembling free association. One patient complained of increased depression.

COMMENT

I have speculated on the possible psychologic mechanism by which deanol produced beneficial results in some of these individuals—how the tired, despondent patient who had been struggling with conflicting emotions experienced a new feeling of hope and energy. Some of the patients had a pattern of morbid or discouraging thought, to which they reacted with depressed or discouraged emotion. In turn, this emotion tended to promote more discouraging thought, thus producing a vicious circle. Deanol seems to combat the fatigue and hopelessness of these persons. The thought-and-affect cycle is turned in the direction of an improved sense of energy and cheerfulness.

It is my impression that the source of this beneficial effect may be some inhibiting action upon the physiologic response produced by morbid or depressive thinking, rather than a stimulating action. No euphoria was observed. In comparison to the amphetamines, deanol has a different type of stimulating action. Some patients who take it notice no effect other than a mild general improvement in their mood and thinking. Others state it as having no effect at all, but the physician, friends or relatives may note that the patient displays a more outgoing personality, greater affability and more daytime energy.[2]

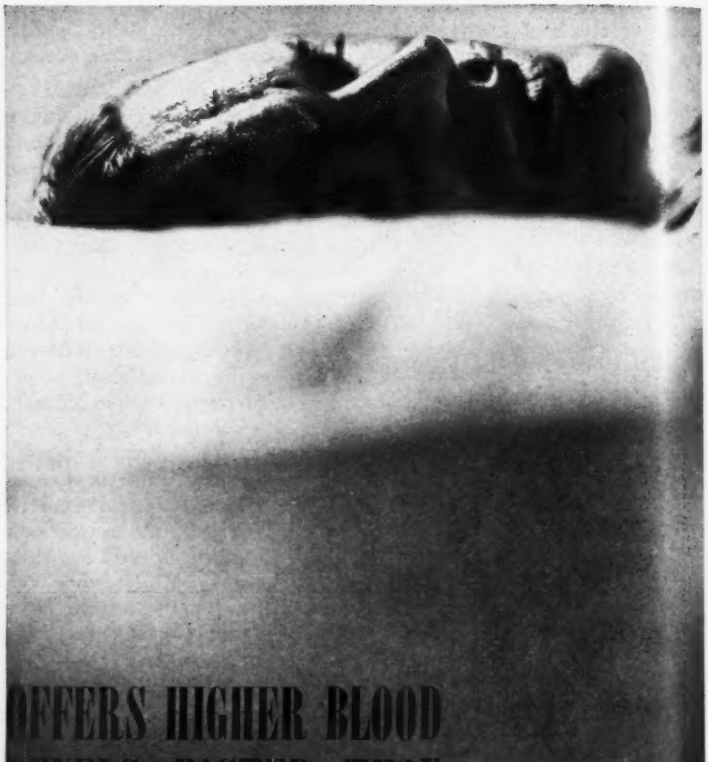
This agent apparently tends to restore the individual to a normal emotional balance which he does not perceive as a change. At times, these patients stopped the medication, feeling it was not worthwhile; whereupon, it was noted that they gradually relapsed into their former depressed moods. When they started medication again, improvement recurred. The relationship of this improvement to the taking of the medication was then pointed out to the patient and cooperation in the taking of the medication usually followed. This subtlety of action is, in a sense, a disadvantage, since in initial experiences it tended to cause me to overlook the value of the drug and prematurely abandon its use. I have since come to consider this an advantage although some patients may become impatient for dramatic results.

The results obtained with deanol in my office practice parallel those reported by others.[1-8] This drug deserves extended clinical study under more controlled conditions.

SUMMARY

Fifty-four private office patients with various complaints indicative

2. Murphree, H. B., et al., 2-dimethylaminoethanol as a Central Nervous System Stimulant—One Aspect of the Pharmacology of Reserpine, Research Publ., Assn. Res. Nerv. & Ment. Dis., Williams and Wilkins Co., Baltimore, Md., 1959. In press.
3. Lemere, F., *Northwest Med.*, 57:1149,1958.
4. Lemere, F., & Lasater, J. H., *Am. J. Psychiat.*, 114:655,1958.
5. Meller, R. L., *Journal-Lancet*, 79:25,1959.
6. Moriarty, J. D., & Mebane, J. C., *Am. J. Psychiat.*, 115:941,1959.
7. Oettinger, L., *J. Pediat.*, 53:671,1958.
8. Toll, N., *Am. J. Psychiat.*, 115:366,1958.



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hiefly of depression or chronic fa-igue were treated with deanol, a ew psychic stimulant. In 30 of 37 atients with depression and in 5 of 6 atients with chronic fatigue, the re-ults were good to fair. Good re-ults were obtained in 2 of 3 pa-ients with chronic tension head-ches. One of 2 children with retard-ion in learning showed good im-provement. Side effects were minor.

The daily dose ranged between 25 mg. and 800 mg. per day, each case requiring individualization.

The elevating effects of deanol on mood and thinking are definite but subtle and gradual. They may be overlooked in some patients unless investigation is careful and treatment is maintained for several weeks.◀

osterior Colpotomy Incisions in ynecologic Disease

Posterior colpotomy has been dis-egarded for many years as either a iagnostic or therapeutic measure in ynecology, this because of the in-reasing safety of an anterior abdom-nal wall incision. The term colpoto-y covers three procedures:

1. Puncture by needle or trocar in he posterior cul-de-sac for intraperi-oneal aspiration.

2. A small posterior cul-de-sac in-ision for the intraperitoneal inser-ion of the culdoscope.

3. A wide incision with penetration f the posterior cul-de-sac into the eritoneal cavity.

The advent of the culdoscope has ade possible the use of the posterior ul-de-sac as an avenue of explora-ion for diagnosis in the pelvis.

Colpotomy is especially useful in elation to tubal and ovarian disease, as a specific use in the observation nd treatment of symptomatic, per-istent, small ovarian cysts in young omen. Many ovarian cysts can e observed, resected, or removed hrough a posterior colpotomy inci-ion. Its use facilitates the early diag-nosis of ovarian cancer. The finding f a solid or questionable tumor de-mands laparotomy. Lysis of some tubal adhesions can be accomplished, thus establishing tubal continuity or preventing the continued formation of adhesions to its permanent destruction. Colpotomy can be converted to vaginal hysterectomy or pelvic repair, if indicated. Some gynecologists do a colpotomy, along with a dilation and curettage, prior to every vaginal hysterectomy. This simple transvaginal incision has been extended in this series to include sacrouterine neurectomy in cases of dyspareunia, dysmenorrhea, pelvic pain, and some cases of infertility. Section of the sacrouterine ligaments can be made to enlarge the incision. Plication of these ligaments without section can be done for the prevention of enterocele. The transvaginal approach to the peritoneal cavity has great value for women labeled neurotic, who desire repeated operations for pelvic or abdominal pain, by resolving doubts as to real or fancied pelvic disease.

Colpotomy is, by contrast, a minor procedure; postoperative complications are few, adhesions are few, loss of time small.

Durfee, R. B., *J.A.M.A.*, 169:1594-1598,1959.

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ORIGINAL ARTICLE

Current Concepts in Initiation of Management of Diabetic Patients

A discussion of the many variable factors that can assist in establishing successful and simplified management of diabetic patients

EUGENE J. RANKE, M.D.,* *Chicago, Illinois*

First to be considered are the criteria needed to judge which patients are suitable for diet therapy alone, which might best be handled by diet and oral hypoglycemic agents, and which will require insulin supplementation. No small matter is the thought and planning given to the program of education and orientation of the patient.

DIAGNOSIS

Diabetics present themselves with quite variable histories, and confirmatory laboratory studies may be equivocal. One patient has been referred following the discovery of glycosuria during an insurance medical examination, or during a routine medical checkup was found to have reducing substances in his urine. Another seeks medical attention because of symptoms of other illness and glycosuria is found to exist. Others have been found elsewhere to have glycosuria but have not been given convincing explanations as to the reason. About the many of these patients who have fasting blood sugars below 140 mg.%, one may test their ability to handle carbohydrate by making a glucose tolerance test. In those pa-

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TABLE 1

CONDITIONS OTHER THAN DIABETES MELLITUS WHICH MAY PRODUCE GLYCOSURIA

ELEVATED FASTING BLOOD GLUCOSE	NORMAL FASTING BLOOD GLUCOSE
1. Hyperthyroidism	1. Renal glycosuria
2. Hyperadrenalism	2. Glycosuria of pregnancy
3. Hyperpituitarism	3. "Alimentary" glycosuria
4. Pancreatitis; Hemochromatosis; Peritonitis	4. Lactosuria and other sugars
5. Increased Intracranial pressure	5. Severe liver damage; Starvation
6. Shock and its associated causes	6. Renal Tubular Damage

TABLE 2

CALCULATION OF TOTAL CALORIES

ACTIVITY	NORMAL WEIGHT	OVERWEIGHT	UNDERWEIGHT
Sedentary	Basal +30%	Basal —25%	Basal +75%
Ordinary Activity	Basal +50%	Basal —10%	Basal +100%
Physically Active	Basal +75%	Basal	Basal +125%

tients whose fasting blood sugars consistently fall in the 140-160 mg.% range, an elevated two-hour postprandial blood sugar will support the diagnosis. In those patients with symptoms characteristic of uncontrolled diabetes mellitus, the finding of a fasting blood sugar of 160 mg.% or higher may be all that is necessary to corroborate the diagnosis.

It is necessary, however, to exclude other conditions with similar laboratory findings as listed in Table 1.*

If the results of the glucose tolerance tests and/or the blood sugar determinations are equivocal, repeat laboratory studies may have to be made before proper therapy can be instituted. Only rarely is it necessary to resort to such procedures as the cortisone-glucose tolerance test.[1] A fasting blood sugar is indicated in the case of all patients with a glycosuria. If this value is normal, then the questions posed earlier must be studied further.

DIETARY TREATMENT WITHOUT INSULIN

Thought and planning given to the diet order when the patient is first seen will often determine the degree of success that will be achieved. A base line of diet information must be established on quantitation of caloric values and food constituents, and on subsequent visits revisions of the diet may be made simply and intelligently. It is not enough to suggest omitting certain high carbohydrate foods or other such loose dietary instruction. The obese diabetic requires undernutrition. The uncontrolled diabetic may have lost weight or be underweight and need specific dietary additions. Associated illness and increased physical activity increase the caloric requirements.

One may allot 25 calories per Kg. body weight to obtain the basal calories.[2] An adjustment of the basal

*Tables reproduced from the June, 1957 issue of *GP*, published by the American Academy of General Practice, Kansas City, Mo.

1. Fajans, S. S., & Conn, J. W., *Diabetes*, 3:296-364, 1954.

2. Joslin, E. P., et al., Treatment of Diabetes Mellitus, Lea & Febiger, Philadelphia, p. 235, 1952.

TABLE 3

GROUPING ACCORDING TO LEVELS OF FASTING BLOOD SUGARS AND URINARY SUGARS BEFORE MEALS AND AT BEDTIME.

GROUP	FASTING BLOOD SUGAR (MG.%)	URINE SUGAR (ANTECIBUM)	THERAPY
I	Below 150	Majority less than 0.5% (++)	Diet
II	160-180	Majority less than 0.5% (++)	Probably diet alone
III	180-200	Majority more than 0.5% (++)	Oral Hypoglycemic Agent or Probably Insulin Supplementation
IV	Above 200	Whether present or not	Oral Hypoglycemic Agent or Insulin

alories is then made with allowances or the patient's physical activity and eight status as shown in Table 2. otal calories allowed are apportioned mong carbohydrates, proteins and ats. Carbohydrate 150-250 gm., proein 70-100 gm., and the remainder f the caloric allowance in fat calories.

Generally speaking, candidates for ietary therapy alone (Table 3), hould first be tried on carbohydrate 50-180 gm. Mild diabetics often successfully desugarize the urine with uch dietary restrictions. Diets containing less than 150 gm. of carbohyrate are less palatable, necessarily igh in fat and tend to be ketogenic. Diets deficient in total calories predispose to injurious undernutrition. he final diet, of course, should be rranged so as to suit the patient's orking conditions with adjustments o provide for any coexisting disease.

The levels of repeated fasting blood ugars and the degree of glycosuria an be used to determine suitability or diet therapy alone or whether insulin or insulin substitutes need be used (Table 3). Group I patients usually can be controlled by diet alone. With proper indoctrination of the patient at the very beginning, the necessary changes in management on subsequent visits are made with ease.

The patients with fasting blood sugars consistently between 160-180 mg.% (Group II) probably can be controlled on diet alone. Should these patients lose too much weight or be unable to regain desired weight, then insulin substitutes or insulin supplementation may be indicated. Should these patients continue in poor general health or develop complications common to uncontrolled diabetes, then insulin supplementation is mandatory.

When the fasting blood sugar exceeds 180 mg.% consistently (Group III), insulin or insulin substitutes are usually necessary. However, some patients in this group might be better controlled by diet alone, *e.g.*, the obese patient may first be tried on a restricted caloric intake with the hope of achieving weight loss and possibly improving carbohydrate tolerance, or the elderly arteriosclerotic might best be managed by diet initially, in this way allowing a period for gauging the severity of the diabetic state as well as the degree of associated illness.

The patients in Group IV will require measures other than diet for

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est control. Excessive hyperglycemia hould not be allowed to exist for ng periods. Protracted states of hyerglycemia are associated with high evels of non-esterified fatty acids,[3,4] which substances may be related to he complications in diabetes. For me time it has been known that exerimental diabetes can be reversed the hyperglycemia can be prevent-d.[5] Also a decreased insulin effect is elated to degeneration of the beta ells of the pancreas, and this degenration can be reversed when hyperlycemia is overcome by insulin.[6] In iew of these arguments, it seems ise to maintain the blood sugar as ear normal as is compatible with the mfort of the patient.

RAL ANTIDIABETIC DRUGS

When dietary therapy does not adeuately control diabetes, oral hypolycemic agents or insulin must be dded to the regimen. In the absence any potential or existing complicaion, the oral antidiabetic drugs may e tried. The newly discovered diabec usually fears and greatly resists inulin therapy. The trial period while n the oral compounds will serve as n opportunity to gauge the severity the diabetes and help orient the atient to the necessary diet instrucons, urine testing and general measres of diabetic care. Should oral erapy be found ineffective the paent is more willing to accept insulin. The patients most likely to respond orally administered antidiabetic rugs are the elderly and the obese dult diabetics in whom the disease more stable. The drugs probably hould not be used in diabetes of youth, or in those known to require 40 or more units of insulin for control.

In the difficult-to-manage juvenile diabetic the oral drugs may be tried in conjunction with insulin. A tablet of a member of the sulfonylurea group, given during the largest meal, may produce consistently desirable fasting blood sugars, less glycosuria and fewer insulin reactions than when on insulin alone, and the insulin dosage may often be sharply reduced.

The drugs should generally not be used if severe systemic disease or infection co-exists. If such conditions arise in a patient previously controlled on oral hypoglycemic agents, caution must be exercised lest acidosis develop.

The patient should appreciate that the oral drugs are not forms of insulin, and that complications from their long-term use are not predictable at this time; that in the overweight patient diabetes can often be controlled by diet alone; and that in the patient with diabetic complications insulin supplementation is usually indicated.

INSULIN SUPPLEMENTATION OF DIET THERAPY

Insulin therapy is indicated in the uncontrolled diabetic whose fasting blood sugars are consistently over 200 mg.%. Patients who are malnourished, in poor general health, or who are unable to cope with or reverse the complications of diabetes, are better managed with insulin supplementation.

The type and dosage of insulin administered depends upon levels of fasting blood sugars and the degree of glycosuria before meals and at bedtime. As referred to in Table 4, the mild diabetic whose fasting blood sug-

3. Burman, E. L., et al., *Diabetes*, 6:475-479,1957.
4. Wolff, O. H., & Salt, H. B., *Lancet*, 1:707-710, 1958.
5. Lukens, F. D. W., et al., *Endocrinology*, 32:475-487,1943.
6. Hair, R. E., et al., *New England J. Med.*, 223: 607-615,1940.

TABLE 4

SUGGESTED REGIMENS FOR ESTABLISHING INITIAL INSULIN DOSAGE

DIABETES			INSULIN
Mild			Protamine[1] @ breakfast (10-20 units)
Mild to Moderate			Protamine @ breakfast; (20-30 units)
	or		NPH[2] @ breakfast (20-40 units)
Moderate to Severe	or	a.	NPH @ breakfast (20-30 units) and, Supplementary NPH @ evening meal; (10-20 units)
	or	b.	NPH @ breakfast (20-30 units) and, Supplementary Regular @ evening meal; (10-20 units)
	or	c.	NPH (20-30 units) Regular (10-20 units) One dose mixed @ breakfast;
	or	d.	NPH[3] (20-30 units) PZI (5-10 units) One dose mixed @ breakfast
	or	e.	Mixtures Reg—1 or 2 or 3; PZI—1 or 1 or 1 @ breakfast
Severe to Very Severe			Individualized Schedule. Usually separate injections of Prot. & Reg. @ breakfast and Supplementary Reg. @ evening meal.

1. Ultra Lente Insulin may be used in place of Protamine Insulin.
2. If desired Lente Insulin may be substituted for NPH Insulin.
3. Mixtures of Lente and Ultra Lente with similar timing may be tried.

ars are in the neighborhood of 200 mg.% and who does not have significant amounts of sugar in the urine, can be controlled with protamine insulin, 10-20 units, at breakfast. Most suitable to this regimen is the recently discovered elderly diabetic. Exceptions to the use of insulin in this group are those patients who are known to have coronary artery disease, or serious arteriosclerotic cardiovascular disease, because of the possibility of insulin hypoglycemia provoking an acute vascular accident.

Mild to moderate diabetics whose fasting blood sugars are in excess of 200 mg.%, and whose urines, tested before meals and bedtime, are relatively sugar free, may be controlled by 20-30 units of PZI; doses larger than 30 units often prove unsatisfactory because of extreme fluctuations of blood sugar. The delayed action of this insulin allows an escape from normoglycemia during the day, and with large doses it is not uncommon to have hypoglycemic reactions during the night when th maximum effect is expected. The a ternative in this case may be the us of NPH or lente insulin. Moderat doses (20-40 units) of these insulin serve to control the patient wh spills significant amounts of sugar i the urine during the daytime an who has a low fasting blood sugar When doses of 50 units or more o NPH or lente insulin are used, th likelihood of excessive hypoglycemi in the mid-morning or mid-afternoo with accompanying insulin reaction presents itself. In providing for th hypoglycemia during the day, the con trol may become so erratic that bloo sugar levels increase through th night leading to high fasting bloo sugar levels. Management of thes problems is covered in the discussio of the next group of patients.

The insulin regimen for patients re quiring increased amounts of insuli may be handled by the several meth ods shown in Table 4. For those pa tients who are sugar-free during th

day and have an abnormally elevated fasting blood sugar on a before-breakfast one-dose NPH or lente insulin schedule, it may be necessary to give the usual 20 to 40 units before breakfast, and, to avoid the hyperglycemia of late evening 10-20 units of NPH or lente insulin before the evening meal.

In patients who do not have a high fasting blood sugar but do have significant glycosuria in the latter part of the day, NPH or lente insulin, 20-30 units before breakfast and 10-20 units of regular insulin before the evening meal may be the desirable and effective schedule.

For patients whose control is not satisfactory and who refuse to take more than one injection of insulin per day, mixtures of insulin may have to be relied on (Table 4). If the greater need is for immediate effect early in the day, 10-20 units of regular insulin may be added to the NPH insulin given at breakfast. If the desired effect is needed in the late evening and through the night, 5-10 units PZI added to the NPH at breakfast will accomplish maximal delayed action. It must be remembered that PZI readily combines with some of the regular insulin in NPH insulin. Adding too large a dose of PZI may make the resultant mixture have an effect of protamine-type action entirely.

Special mixtures can be prescribed for the one-dose-a-day patient in whom the aforementioned mixtures have been unsuccessful or undesirable. Mixtures containing 1:1, or 2:1, or 3:1, etc. of regular to protamine insulin can be used depending upon the desired insulin effect. These mixtures are generally less predictable in their insulin action because of the lack of uniformity of mixing. Better predictability supposedly can be achieved by proper mixtures of the lente insulins.[7] Ultra lente which has a delayed or prolonged action resembling that of PZI, and semi-lente with action resembling that of regular insulin may be added to lente insulin

Patients whose diabetes is severe from the standpoint of control may require separate injections of protamine and regular insulin at breakfast and when necessary a dose of regular insulin before the evening meal, in 2:1 ratio of protamine to regular at breakfast, and 10-20 units of regular before the evening meal. If this schedule fails to control the diabetes, the program of insulin and oral hyperglycemic agents may be given a trial. Should this scheme be used, only one dose of NPH or lente insulin 30-50 units, may have to be used with one tablet of 500 mg. or less of the oral anti-diabetic drug.

GENERAL SUGGESTIONS AND PRECAUTIONS

Insulin should not be administered routinely other than before breakfast and before the evening meal, because of the overlapping effect and resultant insulin reactions of frequent multiple injections. The use of regular insulin at lunch or 4-5 hours after having given a breakfast dose of either intermediate or regular insulin potentiates the insulin effect at a time when the breakfast insulin dose is maximally effective and the blood sugar is already falling. This combination of quick-acting insulins commonly produces undesirable afternoon hypoglycemic reactions. Similarly regular insulin given at bedtime is additive to the delayed effect of protamine insulin given at breakfast whose maximal action would be expected to occur after midnight. Using insulin

7. Hallas-Moller, K., et al., *J.A.M.A.*, 150:166 1671,1952.

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at such times can often be responsible for insulin reactions occurring in the middle of the night, especially with the long interval between feedings at bedtime and breakfast.

In emergency situations extra amounts of insulin are needed and the schedule of both food and insulin may have to be arranged on a 4- to 6-hour basis, the basal insulin requirements being met, the dosage divided so as to protect the patient from wide fluctuations in blood sugar. The basal insulin requirement is that amount which in the past has been found to maintain adequate diabetic control. Additional insulin may be incorporated in the revised insulin regimen according to caloric intake and glycosuria in the 4 to 6 hour schedule in these emergencies.

How much insulin is to be used upon initiation of therapy varies from patient to patient. The majority of newly discovered diabetics who are out of control and who have not been previously placed on insulin, have had elevated blood sugars for some time. In the absence of complications, it is not necessary to rapidly achieve normoglycemia. Many of the patients will adjust to the slow correction of the metabolic defect with a better sense of well-being, with less side effects, and more assurance than if large doses of insulin are used. Considerable time must be spent in familiarizing these patients with the program which, when understood and accepted, will control the disease. Anxiety upon learning one has diabetes is less distressing to the patient who is well informed from the beginning.

The diabetic diet is not very different from that used by the non-diabetic. Urine testing and keeping a record of these tests stimulate an interest and desire for better control and help in the interpretation of subsequent blood sugar testing.

Patients requiring insulin must be taught sterilization of their hypodermic equipment and self administration of insulin. The time that their insulins may produce hypoglycemic reactions should be known to the patient and to some responsible member of the family, and how to possibly prevent or relieve insulin hypoglycemia.

The diabetic should be told some of the symptoms resulting from poor diabetic control and those suggestive of diabetic acidosis or coma. It is best that the patient understand that any situation which may disturb the body state as a whole will adversely influence diabetic control; that acute upper respiratory infections, gastrointestinal upsets, minor surgery, etc. may increase insulin requirements even though the daily oral caloric intake is diminished at the time. It may be that these intervening illnesses will require readjustment of the meal schedule and a division of the insulin requirements throughout the 24-hour period.

Diabetic complications, at least on their first appearance, are handled best in the hospital. These include ulcerations of the feet with associated peripheral vascular impairment with or without gangrene, severely disabling diabetic neuuritis, renal failure, the initial attempt at balancing a newly discovered juvenile diabetic, and the patient with low mentality who is slow in grasping the essentials needed for good control.

SUMMARY AND CONCLUSIONS

1. The diabetic diet, although liberalized, should satisfy the nutritional

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needs of the patient. In the obese patient, caloric undernutrition is indicated and often in itself controls the diabetic state. Caloric omissions merely to control the normal or underweight patient by diet alone when insulin or insulin substitutes are needed, should not be relied upon.

2. In uncomplicated, adult-type diabetes, the oral antidiabetic drugs may be tried when dietary therapy does not adequately control the diabetic state.

3. Insulin is indicated in the diabetic patient who persistently has hyperglycemia and glycosuria and who is unable to correct associated undernutrition or the complications common to uncontrolled diabetes.

4. The levels of fasting blood sugars, and the degree and distribution of glycosuria through the day can be used to determine the type and dosage of insulin recommended. Correct insulin timing will avoid the hypoglycemic reactions resulting from multiple overlapping insulin schedules.◀

Dumping Syndrome

By-passing or sacrificing the pylorus during gastric surgery commonly results in the so-called "dumping syndrome," a variety of uncomfortable symptoms occurring shortly after meals. The mechanical phase of the syndrome, thought to reflect jejunal distention, manifests symptoms such as epigastric fullness, abdominal pain, and nausea, while in the more obscure vasomotor phase, apparently mediated through the autonomic nervous system, symptoms consist of weakness, faintness, tachycardia, feeling of warmth, and perspiration.

A currently supported theory of etiology is based on the relationship of osmotic pressures within the jejunum of those within the blood. Jejunal pressure may be increased by ingestion of foods which are hypertonic, and the resulting osmotic pressure relieved by vomiting, diarrhea, or by reclining of the subject which causes reflux of the ingested food into the gastric remnant. If this relief does not occur, the sudden shift of extracellular fluid from the blood to the jejunum equalizes osmotic relationships between the two areas, resulting in decreased blood volume often accompanied by a marked peripheral vasodilation which acts to pool away from the heart and brain. The mechanical phase of symptomatology is produced by the vast amount of fluid entering the jejunum, while vasomotor symptoms apparently are produced by autonomic nervous system discharges initiated by acute changes in the circulating blood volume.

Apparent spontaneous improvement of the syndrome occurs by trial and error omission of offending foods, small, frequent feedings, and rest in a reclining position after an unavoidably large meal. A written questionnaire, completed by 36 patients with dumping symptoms chiefly of the mechanical phase and occurring within 30 minutes after eating, indicated that the most common offending foods are milk and its products, sweets, and any liquids taken with the meal.

Butin, W. J., *J. Kansas M. Soc.*, 60:1-10.1959.

ORIGINAL ARTICLE

Prevention of Angina Pectoris Attacks Through Complementary Drug Action

A drug combination effectively controlled anginal distress without major side effects in 47 of 62 patients

HARRY J. ISAACS, M.D.,* *Chicago, Illinois* and
JULIEN H. ISAACS, M.D.,† *Los Angeles, California*

In the literature dealing with the prevention of angina pectoris attacks it is possible to find support for a wide choice of modalities ranging from sedatives and psychotherapy to surgery aimed at increasing myocardial blood flow, few of which have remained consistent in action over a long period of time. The authors have relied on two major drugs, parenteral Demerol and sublingual nitroglycerin, and in later years pentaerythritol tetranitrate (PETN).

Among the agents for relief of acute anginal pain, nitroglycerin is the most effective and reliable. Nitroglycerin is readily absorbed from the stomach,[1] and its use for prophylaxis of anginal attacks has long been advocated.[2,3] PETN has a more prolonged effect and it is valuable in reducing dependence on nitroglycerin.[4,5] Since PETN requires one-half hour for full effect,[6-8] its combination

*Professor and Chairman, Department of Medicine, Chicago Medical School.
†Instructor, Department of Medicine, University of Southern California School of Medicine.

1. Marshall, C. R., *J. Pharmacol. & Exper. Therap.*, 83:106,1945.
2. Master, A. M., *J.A.M.A.*, 162:1542,1956.
3. Coogan, T. J., et al., *M. Clin. North Amer.*, Jan. 1956, p. 180.
4. Plotz, M., *New York J. Med.*, 52:2012,1952.
5. Russek, H. I., et al., *J.A.M.A.*, 153:207,1953.
6. Riseman, J. E. F., et al., *Circulation*, 10:809,1954.
7. Talley, R. W., et al., *Am. J.M. Sc.*, 230:254,1955.
8. Plotz, M., *Postgrad. Med.*, 24:189,1958.

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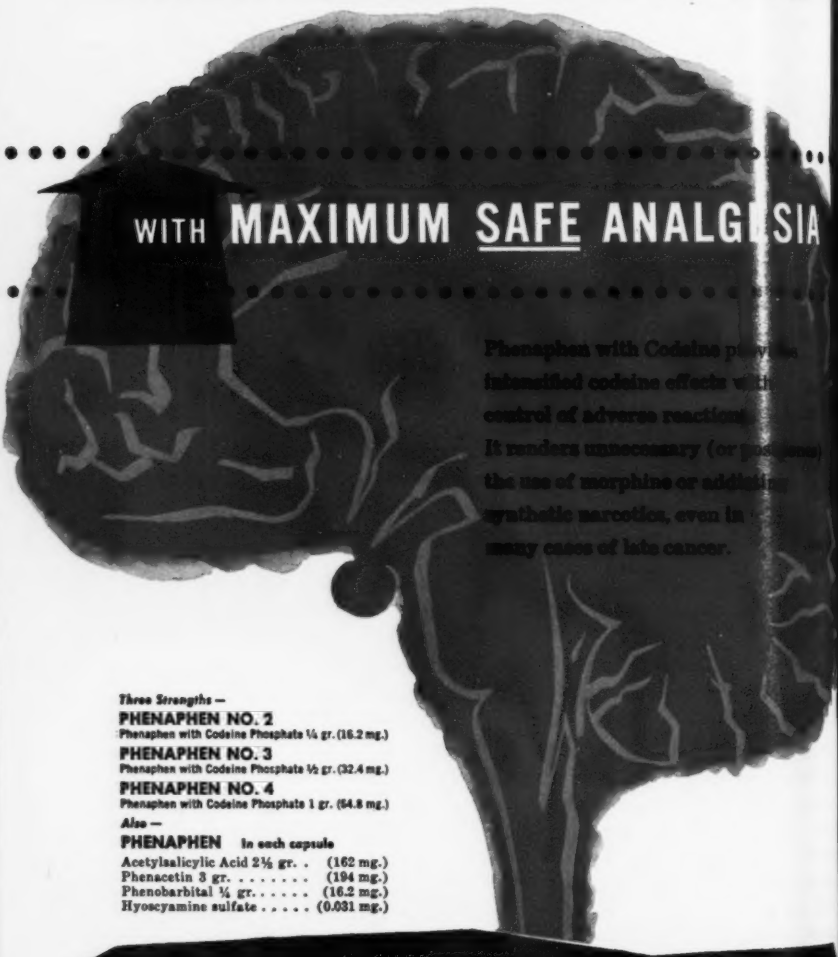

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with nitroglycerin has been suggested to speed the action and increase its effectiveness.[8] This complementary action is especially valuable before meals to reduce the postprandial burden on coronary circulation. It is suggested that these two drugs produce more than a "step-wise" action and that this enhancement of action results in a more dependable pharmacodynamic effect.

The addition of reserpine to PETN has been shown to increase therapeutic effectiveness.[9,10] The bradycrotic action of the rauwolfia preparations plays a contributory role.[10] The use of reserpine with nitrates attacks several of the mechanisms involved in the production of an anginal attack, and consequently produces more benefit than any of its ingredients alone.[10] The effect of rauwolfia in slowing the heart rate may be in part responsible for its pain-relieving action.[3]

It is common experience for persons suffering from anginal distress to present themselves while on maintenance PETN therapy. New drugs or new combinations of drugs and therapeutic regimens are constantly being searched for.

The present study was undertaken to determine the effectiveness in the relief of anginal distress of a new combination of drugs containing the following: PETN 10 mg., nitroglycerin 0.3 mg., and reserpine 0.07 mg., in tablet form.*

METHODS OF STUDY

Sixty-eight patients with anginal distress were studied for periods of time ranging from one or two weeks to three and four months. All satisfied the authors' criteria and impression for the major aspects of angina pectoris. These criteria included substernal pains, radiating to the neck and down the left arm, onset with exertion, emotion or following heavy meals; relief of distress with rest or the use of nitroglycerin sublingually in less than 30 to 60 minutes. Clinical data, electrocardiographic follow-up, blood pressure and other pertinent data have been recorded in special data books.

The frequency and severity of anginal distress were judged by each examiner from a combination of the subjective complaints, his own observations, and the patient's daily record of distress. The number of nitroglycerin tablets used were recorded on a special report card. The patients were selected in the order of their appearance from the office practice and clinic services.

The purpose of this study was to determine the effectiveness and untoward effects of the drug combination in angina pectoris as used in routine office practice by the average physician. The following dosage regimen was maintained:

Penite tablets and PETN (10 mg.) were administered on a q.i.d. schedule before meals. For best results, these drugs were given on an empty stomach. Angina patients having continued distress on PETN were changed to Penite. Those with similar distress on Penite were tried on a regimen of PETN. No attempt was made to administer doses larger than 1 tablet q.i.d.

There were continued observations of 65 patients; three did not return for follow-up visits. A few refused or forgot to return the daily re-

*Penite Tablets®, G. W. Carnrick Co., Newark, New Jersey.

9. Snow, E. W., *Northwest Med.*, 45:34,1955.
10. Dietz, G. W., *Am. Practitioner*, 8:1972,1955.

TABLE 1

COMPARATIVE RESPONSE TO *PENITE* AND PETN

	Number of Patients	Improvement		
		Minimum	Moderate	Marked
On Penite, alone	10	2	4	4
On PETN alone	4	2	2	
Both Drugs	2	1	1	

TABLE 2

SUMMARY OF RESPONSES TO TREATMENT WITH *PENITE* AND PETN

Drug	Number of Patients	Improvement				
		None	Minimum	Moderate	Marked	Asymptomatic
PETN	18	13	2	2	1	—
Penite	62	15[1]	4	22	14	7[2]

1. improved without treatment.
2. not included in marked group.

cord card. These were questioned in detail to obtain an accurate impression of their results or distress. Sixty-two trials were recorded with Penite and 18 with PETN alone; both drugs were studied in 14 instances.

Of the 62 case trials with Penite, 47 (75%) experienced definite improvement. Marked to moderate improvement was observed in 40 patients on the dose of 1 tablet q.i.d. Seven patients (10%) became symptom-free with better effort tolerance on this regimen; 15 (25%) did not respond to one tablet q.i.d.

Of the 14 combined trials, improvement was recorded in 10 instances with Penite where the PETN had proved ineffective; the reverse occurred in only 4 cases. Thus, 10 of the initial PETN responses were judged poor on the basis of maximum anginal distress while on a maintenance dose of PETN. These patients experienced improvement when changed to Penite. In two instances patients responded with moderate to marked improvement on both PETN and Penite.

Table 1, the responses in the combined studies, indicates that the improvement obtained on Penite (without prior PETN) was judged moderate.

Seven patients experienced minimal to moderate blood pressure improvement on Penite. No blood pressure improvement was noted on PETN alone. Electrocardiograms, before and after therapy, was largely unchanged. Two patients developed further ischemic changes on the electrocardiogram (T wave inversion, not due to digitalis); both have been judged to be improved on Penite therapy.

Untoward symptoms were reported by three patients; in two of these the symptoms were, in the investigators' opinion, unrelated to Penite

therapy; in the third the untoward effects were very transient. All symptoms were minimal.

Table 2 summarizes the results.

DISCUSSION

Penite appears to be an effective therapeutic agent for the relief of anginal distress. The good improvement in 75% of the patients given Penite therapy indicates a direct therapeutic and physiological effect. The combination of drugs develops a definite therapeutic effect in the heart in addition to the tranquilizing and ceremonial effects, possibly by counteracting the effect of accumulating metabolites on the cardiac muscle. The physiologic effect appears greater than for PETN alone.

Comparison of the combined trials of Penite and PETN in the same anginal patient demonstrate the greater effectiveness of Penite. The authors believe this effect is one of the most useful characteristics of this formula, namely, its ability to relieve anginal pains and lessen frequency of attacks in subjects having their maximum distress on maintenance therapy with other drugs.

Penite is a practical adjuvant for the office or clinical therapy of anginal patients. Untoward effects are transient, or minimal to absent in the dosage used. The majority of those treated were improved to a moderate or marked degree by minimal doses. In 10% of the cases the drug aided in producing a symptom-free state, with increased effort tolerance.

Blood pressure was improved along with anginal distress in a few subjects, suggesting that the reserpine effect was of significance for the blood pressure response as well as for improving the anginal pain. A tension factor may have been present, aggravating blood pressure and inducing anginal pain.

CONCLUSIONS

1. Penite, in minimal doses utilized in this study, has proved to be an effective agent for management of the frequency and severity of anginal distress. Ten per cent of the patients became symptom-free for long periods of time, ranging from 3 to 4 months. It has been a useful aid in relieving symptoms of subjects experiencing their maximum distress on other maintenance medications.

2. Penite is useful for therapy of subjects with "anginal anxiety."

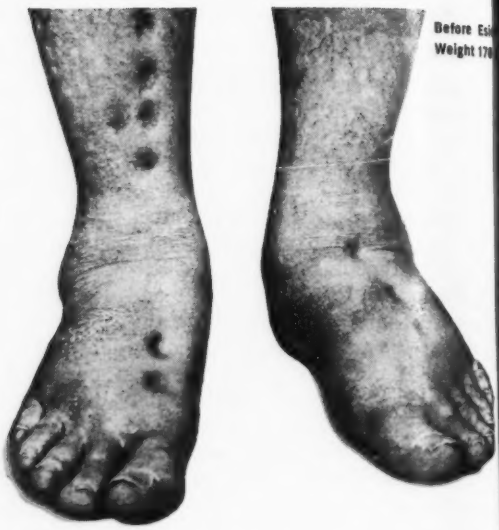
3. No major electrocardiographic changes were noted.

4. Blood pressure improved in a few subjects simultaneously with anginal distress, probably reflecting a reduction in tension factor.

5. Side-effects were minimal or absent.

6. The clinical aspects of this study demonstrate that a large majority of patients with severe angina can achieve a moderate to marked improvement on minimal therapy with Penite.◀

11. Plotz, M., Coronary Heart Disease, Hoeber-Harper, 1957, p. 299.



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ORIGINAL ARTICLE

Surgery in Acquired and Congenital Coronary Insufficiency

A description of the Johnson operation for improving blood supply to the myocardium in coronary heart disease

ARAN S. JOHNSON, M.D.,* *Detroit, Michigan*

Patients with coronary artery disease, both acquired and congenital, can be treated successfully by surgery. The problem of coronary artery atherosclerosis remains unsolved, however, surgical methods for increasing the blood supply to the myocardium now offer a patient with coronary artery disease a productive and bright future.

ACQUIRED CORONARY ARTERY DISEASE

In the acquired type of coronary artery disease, the characteristic findings are intimal thickening, degeneration and plaque formation involving the vascular tissue—all features of atherosclerosis. The etiological factors will not be discussed since they remain controversial.

CONGENITAL CORONARY ARTERY DISEASE

In congenital coronary insufficiency, the characteristic findings are endocardial and subendocardial fibrosis, severe degeneration and diffuse connective tissue displacement of the myocardium. Injection studies of the coronary arteries reveal poor collateral and inter-communicating branch formation. In a number of cases the

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left coronary artery arises from the pulmonary artery. As a result of the developmental coronary artery defect, chronic myocardial anoxia produces the entity, congenital subendocardial fibroelastosis.

It has been demonstrated time and again (in the experimental laboratory and clinically) that once a heart becomes unstable, increased work load can easily produce ventricular fibrillation and death. An unstable heart is one in which there are areas (trigger zones) within the myocardium having a variation in the oxygen differential. The difference in myocardial oxygen saturation is the result of coronary artery disease, acquired or congenital. By introducing outside sources of blood, an unstable heart may be rendered stable by improving the oxygen saturation of the entire myocardium and removing the trigger areas.

THE JOHNSON OPERATION

The surgical procedure described as the Johnson operation for improving the blood supply to the myocardium in the patient with acquired or congenital coronary artery insufficiency can be outlined in the following way:

The rich vascular pericardial and mediastinal fat pads are mobilized and developed into free pedicle grafts. The pericardium is incised above the left phrenic nerve, then, by means of a rasp, the inner surface of the entire left pericardium and the left epicardial surface of the heart is abraded. Heart powder consisting of Isoniazid, Kieselguhr, and Asbestos powder in a mixture of equal parts is lightly sprinkled onto the left epicardial surface of the heart. The free pedicle grafts are sutured in the region of the apex and below the anterior descending branch of the left coronary artery with No. 0000 atraumatic silk suture. Pericardial windows 1.5 cm. in diameter are cut into the pericardium (approximately eight windows). The pericardial incision is closed with interrupted No. 000 silk sutures. Ligation of the left internal mammary artery at the third interspace is then carried out, the right internal mammary artery is also ligated at the level of the second right interspace through a separate incision, and finally, the pericardial surface of the left lung is abraded with a dry sponge. The surgical approach for this operation is through a left anterior submammary incision entering the pleural cavity through the fifth interspace. The operating time is approximately one hour.

This simple revascularization operation provides four outside sources of blood for a chronic anoxic myocardium. The new rich vascular channels to the myocardium develop from the free pedicle grafts, from the pericardium; from the increased backward flow through the internal mammary artery and its branches, and from the left lung. The vascular adhesions from the ligated left internal mammary artery and the left lung grow onto the heart surface through the pericardial windows. The powder used as described acts as a chemical and mechanical irritant in the stimulation and formation of the vascular adhesions.

SURGICAL RESULTS IN 24 CASES

Cases	Disease	Results
14	Acquired	Excellent
6	Acquired	Good
1	Acquired	Fair
1	Acquired	Died
2	Congenital	Excellent

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References: Batterman, R. C., et al.: New York J. Med. 58:3821, 1958. / Harrison, T. R.: Principles of Internal Medicine, 3rd ed. McGraw-Hill 1958, Pg. 1764. / DiMascio, A., et al.: Am. J. Psychiat., 115, 301-317, 1958. / Sainz, A.: Proc. of Mohawk Valley Psychiatric Assn., June 17, 1957. / Fleischmajer, R., et al.: Antib. Med. & Clin. Therap., 5, 120-124, 1958. / Hoekstra, J. B., et al.: J. Am. Pharm. A., 42, 587-593, 1953. / Cronk, G. H. and Naumann, D. E.: New York J. Med., 55, 1465-1467, 1955. Paper in preparation: data on 500 clinical cases available on request.

WAMPOLE LABORATORIES, STAMFORD, CONN.

of coronary artery disease, and those with electrocardiographic evidence of coronary insufficiency, should be considered as possibly potential candidates for the revascularization operation. Age is not a contraindication. The only contraindications are severe diffuse myocardial degeneration, recent myocardial infarction, and acute and chronic pulmonary disease. The risk of operation is less than five per cent.

RESULTS IN A GROUP OF 24 PATIENTS

Over a period of two years, 24 patients were operated upon for coronary artery disease—22 adults with the acquired and two infants with the congenital types. The ages in the adult group ranged from 32 to 67 years, in the infants from four to seven months. In the adult group there was one death, in the infants' group none.

RESULTS OF TREATMENT

For the acquired group, 14 were excellent, four good, one fair and one died. The definition of excellent is freedom from pain, no required medication and no physical restrictions or limitation. Good results mean freedom from pain, enforced physical restrictions, i.e., no hard labor or sports, and daily digitalis. The one patient classified as fair was experiencing occasional pain with physical exertion, had enforced sedentary work and received daily digitalis.

In the congenital group there are two excellent results. Postoperatively there is a decrease of heart size in these infants as determined by roentgenograms. Heart sounds are strong and of good quality (no longer distant and sluggish). The skin is warm, dry and of good color (no longer cold, clammy and gray). Appetites improved greatly and they are now growing and happy babies.

Physiopathological studies indicate that a large number of the patients with coronary artery disease also have adrenal insufficency. Experimental and clinical reports reveal beneficial results from using cortisone and ACTH in acute and chronic myocardial states of anoxia. With this knowledge, the 18 reported adult patients received steroid therapy pre- and postoperatively. These patients withstood the surgical procedure well, recovered rapidly from the anesthetic, and their postoperative convalescence was smooth and uneventful except for the one death.

SUMMARY

An operation for improving the blood supply to the heart in patients with acquired and congenital coronary heart disease has been described and the clinical results tabulated. The administration of steroids pre- and postoperatively to the patients who have adrenal insufficiency to decrease the surgical mortality and morbidity is advocated.◀

ORIGINAL ARTICLE

Symptomatic Therapy of the Common Cold

A new oral combination effectively relieved nasal congestion in 80 per cent of 25 and cough in 89 per cent of 18 patients

G. GORDON SNYDER, M.D., *Bryn Mawr, Pennsylvania*

Restoration of patency of the nasal passages is essential in management of the common cold. Topical nasal medication may be effective in decongesting the nasal mucosa but concomitant adverse effects are sometimes produced systemically and locally.[1]

Normally, the nasal secretion is slightly acid (pH 5.5 to 6.5) and becomes alkaline when inflammation occurs.[2] Topically applied nasal vasoconstrictors produce but partial shrinkage of the nasal and the sinal tissues,[3] and may delay the return of nasal secretion to its slightly acid status.[4] In addition, topical vasoconstrictors may produce further irritation of the mucous membranes and are not recommended for use by patients who have a tendency toward chronic nasal inflammation.

An oral medication in tablet form* is now available which is designed for effective symptomatic relief of cough of allergic or bronchial origin, for the rhinitis associated with many colds and upper respiratory infections, and for allergic rhinitis, including hay fever.

Chlorpheniramine maleate is one of the most effective antihistamines for daytime use. In therapeutic dos-

1. Pierson, J. W., *J.A.M.A.*, 99:1163,1932.
2. Fabricant, N. D., *J.A.M.A.*, 151:21,1953.
3. Editorial, *J.A.M.A.*, 169:956,1959.
4. Fabricant, N. D., *Eye, Ear, Nose & Throat Month.*, 37:460,1958.

**Syntussin®*, Each tablet contains chlorpheniramine maleate, 2 mg., phenylephrine hydrochloride, 7.5 mg., dextromethorphan hydrobromide, 10 mg., and terpin hydrate, 64.8 mg. Ives-Cameron Company, Philadelphia 1.

age, it is practically devoid of any effect of drowsiness so common with many other antihistaminic agents, is fully effective in low dosage, and may be administered orally or parenterally.

Phenylephrine hydrochloride is an adrenergic agent with effective nasal vasoconstrictor and decongestant action which affords symptomatic relief of allergic rhinitis and similar disorders.

Dextromethorphan hydrobromide is a synthetic morphine derivative employed as an antitussive agent, is non-addictive, has little or no central depressant activity, and does not produce analgesia. Although it is non-narcotic, it has been proved as effective as codeine in diminishing the cough reflex.

Topical nasodilators may frequently produce rebound in congestion, incomplete shrinkage, and undesirable change in pH; therefore it was decided to evaluate the benefits and side effects of oral therapy.

METHOD OF STUDY

A total of 25 patients, 15 men and 10 women ranging in age from 14 to 63 years (average age, 25.5 years), were each given 2 tablets, then 1 tablet either three times daily or four times daily as determined by their condition. Diagnosis, symptoms, and responses were recorded on individual case report forms. The intensity of the cough, when present, was indicated as being severe, moderate, or slight. The average duration of therapy for the 25 patients was 2.9 days.

ACUTE CORYZA

Of the 13 patients for whom the diagnosis was acute coryza, 10 received 2 tablets initially, then 1 tablet three times daily. The remaining 3 patients received 2 tablets initially, then 1 tablet four times daily. Average duration of illness for the 13 patients in this group before therapy was 2.5 days. None had received medication previously. Cough was moderate in 6 patients and slight in 3. Nasal congestion was present in all 13.

ACUTE RHINITIS

A diagnosis of acute rhinitis was made for 4 patients. Three of the 4 patients received 2 tablets initially, then 1 tablet three times daily. One patient received 2 tablets initially, then 1 tablet four times daily. A moderate cough was present in only 1 patient in this group. Congestion was present in all 4. The average duration of illness for this group was 2 days and none of the patients had received previous medication.

ACUTE ETHMOIDITIS

Two patients had acute ethmoiditis and both had previously received medication in the form of local nasal vasoconstrictors. The average duration of their illness was 1.5 weeks. Both patients received 2 tablets initially; then 1 patient received 1 tablet three times daily and the other received 1 tablet four times daily. Cough was severe in one and moderate in the other. Both patients had nasal congestion.

ACUTE RHINO-SINUSITIS

A diagnosis of acute rhino-sinusitis was made for 5 patients. Duration of illness for this group was 8 days. In all 5 patients, cough (severe in 2, moderate in 3) and congestion were present. Only one patient had received previous medication and that was in the form of topical nasal vasoconstrictors.

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EATON LABORATORIES, NORWICH, NEW YORK

The remaining patient in this study had had chronic allergic rhinosinusitis for a period of more than 20 years. All forms of antihistamines had been used without success. A moderate cough and congestion were both present. This patient received 2 tablets initially, then 1 tablet four times daily.

RESULTS OF STUDY

Of the 18 patients who had cough (severe, moderate, or slight), 16 (89%) responded to therapy. In these 16 patients the intensity of cough was improved from severe to none in 3, moderate to none in 10, slight to none in 1, and from moderate to slight in 2. The remaining 3 patients were unable to tolerate the medication; therefore therapy was discontinued and the response indicated as negative. Of the 22 patients who responded to therapy, the decongestant effect of the medication was excellent in 19 (76%), good in 1 (4%), and fair in 2 (8%).

There were no side effects in 22 patients (88%). In 3 patients (12%), moderate nausea and vomiting occurred. These patients all had acute coryza. No other adverse effects occurred.

With oral therapy there was complete shrinkage of all the nasal and sinal tissues and no delay in return of the nasal secretion to a slightly acid status, in contrast to the results obtained with the use of topical nasal shrinkers.

Of particular interest was a patient who had had chronic allergic rhinosinusitis for more than 20 years and had failed to respond to all previous forms of antihistamine therapy. In 3.5 days, the cough had completely disappeared and response to the decongestant action of the oral medication was excellent.

SUMMARY AND CONCLUSIONS

Chlorpheniramine maleate, phenylephrine hydrochloride, dextromethorphan hydrobromide, and terpin hydrate, combined in tablet form, was used for the treatment of 25 patients who had acute coryza, acute rhinitis, acute ethmoiditis, acute rhino-sinusitis, and chronic allergic rhino-sinusitis. Nasal congestion was present in 25 patients, with cough in 18 of the 25.

Cough was either improved or completely cured in 16 (89%) of the 18 patients. Decongestant efficacy of the medication was excellent in 19 (76%) of the 25, good in 1 (4%), and fair in 2 (8%).

Other than nausea and/or vomiting which occurred in 3 patients who were intolerant, there were no adverse effects. There was complete shrinkage of the nasal and sinal tissues and no delay in the return of the normal slightly-acid nasal secretion.

Although the number of patients included in this study is small, past experience in the treatment of the common cold has made it possible to evaluate advantages of the use of oral therapy in comparison with topically administered nasal vasoconstrictors.

It appears that the oral medication employed in this study is superior to topical nasal medication in management, control of complications, and relief of symptoms in the common cold. Oral therapy also is advantageous in its ease of administration.◀

ORIGINAL ARTICLE

ffects of Hydroxyzine On Gastric Secretions

Orally or parenterally administered hydroxyzine reduced basal gastric acidity levels in a majority of twenty-one cases

I. H. STRUB, M.D.,* and A. CARBALLO, M.D.,* *Chicago, Illinois*

TRODUCTION

Many of the agents used to allay stress in gastrointestinal disease ay produce undesirable side effects d may actually aggravate the dis- se process.[1-4] The most serious of ese drug-induced enteric diseases is stroduodenal ulceration.[1] Chemo- erapeutic agents represent an in- easingly important factor in the iology of human peptic ulcer, with without bleeding, the incidence of ich has been estimated at 5-10 per nt.[3]

Among the large number of new drugs,[1,3-6] there have appeared groups that sedate in a selective manner, quieting certain overactive patients and tranquilizing the disturbed patients. The attributes of this group of drugs are freedom from disturbances of mind or passion and absence of mental confusion, resulting in a state of tranquillity.

"First do no harm" requires circumspection in the use of tranquilizers, especially in gastroenterology. Recent work indicates that potential secretogogue properties exist in most of these,[1,4] perhaps through release of histamine or of serotonin.

The search for a potent ataractic

om the Departments of Medicine, Stritch School Medicine of Loyola University and Mercy Hos- al, Chicago, Illinois.

Kirsner, J. B., *Ann. Int. Med.*, 47:666,1957.
Editorial, *J.A.M.A.*, 165:1960,1957.
Ivy, A. C., et al., Peptic Ulcer, Blakiston Co., Philadelphia, 1950, p. 481.
Haverback, B. J., et al., *Am. J.M. Sc.*, 230:601, 955.
5. Editorial, *Brit. M.J.*, 2:1227,1956.
6. Friedman, H. T., & Mermelzat, W. L., *J.A.M.A.*, 162:628,1956.

TABLE 1

EFFECTS OF *ATARAX* ORALLY

Number of Patients	Atarax Dose (mg.)	Average Basal HCl			Average HCl 1 hour after dosage			Average HCl 2 hours after dosage		
		Vol. (ml.)	Conc. (C.U.)	Output (mg.)	Vol. (ml.)	Conc. (C.U.)	Output (mg.)	Vol. (ml.)	Conc. (C.U.)	Output (mg.)
2	10	157.5	57.0	302.5	124.5	44.0	202.0	88.0	43.0	145.3
3	20	99.3	42.6	134.3	38.0	26.6	37.2	67.0	27.3	88.7
3	30	91.6	48.6	200.1	44.0	45.6	80.3	41.3	53.6	85.7
5	40	119.4	46.2	204.0	57.2	27.8	67.8	51.4	26.2	47.3
2	50	79.5	32.0	74.3	36.0	49.0	63.2	46.0	38.0	64.0
1	60	102.0	48.0	178.2	29.0	30.0	31.7	3.0	6.0	.65
2	80	113.0	34.5	158.9	47.5	35.5	65.7	50.0	42.0	146.6
3	130	87.0	48.0	124.4	41.6	32.6	32.1	10.3	26.0	15.5
Average for all		106.2	44.6	172.1	52.2	36.4	72.5	44.6	32.8	74.3

of low toxicity has focused attention on hydroxyzine*, a diphenylmethane-piperazine compound, introduced in 1954. Its chemistry and pharmacology set it apart from the major groups of psychotropic agents.[7]

Animal studies have demonstrated that the drug blocks certain effects of serotonin, epinephrine and histamine. It has no hypnotic action, has some analgesic and some antispasmodic effects. Vasodilation is demonstrable in rabbit coronary, ear and leg vessels. Antiemetic effects (tested against apomorphine and veratrum alkaloids) as well as definite anticonvulsive properties, plus disconnection of conditioned reflex patterns in rats, are all demonstrable properties.[8-10]

Because of the side effects of other tranquilizing agents,[1,2,4-6] an investigation to determine the effect of hydroxyzine upon gastric secretion was undertaken.

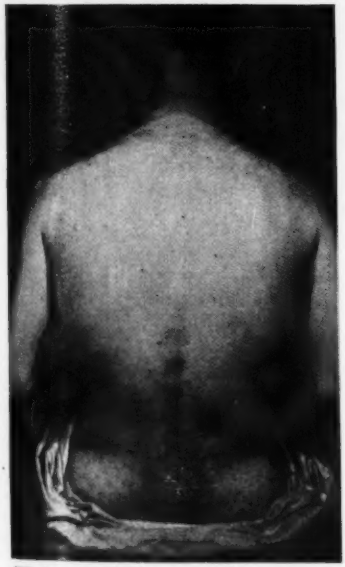
METHODS AND MATERIALS

Twenty-one patients with high levels of free hydrochloric acid were studied. Each patient was brought to the laboratory in the fasting state. Analyses were performed between 8:00 A.M. and 12:00 A.M., after an overnight fast. A Rehfuss or Levin tube was introduced into the stomach and the tip was located at the level of the antrum. The residual contents were removed and discarded. Continuous aspiration was then maintained by suction, with the patient in a sitting position. Secretions accumulating in the mouth were expectorated. Collections were made in four 15-minute periods (one hour basal).

At this time hydroxyzine, 10 mg. to 130 mg., was instilled through the tube. No aspirations were performed for one hour after introduction of hydroxyzine. Continuous aspiration was then resumed by constant suction, collections for analysis being made every 15 minutes for an additional two hours. The volume of secretion, concentration and output of hydrochloric acid in each specimen were measured in the usual manner and

*Atarax®, J. B. Roerig and Company (Div. Chas. Pfizer & Co., Inc.), New York.

7. Council On Drugs, Psychotherapeutic Drugs, *J.A.M.A.*, 166:1040,1958.
8. Sherrod, T., *Toxicol. & Applied Pharmacol.*, 1: 162-167,1959.
9. Levis, S., et al., *Arch. Internat. de Pharmacodyn. et de Therap.*, 109:127,1957.
10. Hutcheon, D. E., et al., *J. Pharmacol. & Exper. Therap.*, 118:451,1956.



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Waterbury, Conn.

*Combes, F. C.: New York State Jrl. Med., 54:13 Pg. 1945, (July) 1954.
*Fox, C. F.: The Treatment of Common Skin Diseases. G.P., 20:1 (July) 1959.
**Rosenthal, T.: Management of Psoriasis, In Press.

TABLE 2

EFFECTS OF *ATARAX* PARENTERALLY

Number of Patients	Dose (mg.)	Average Basal HCl			Average HCl 1 hour after dosage			Average HCl 2 hours after dosage		
		Vol. (ml.)	Conc. (C.U.)	Output (mg.)	Vol. (ml.)	Conc. (C.U.)	Output (mg.)	Vol. (ml.)	Conc. (C.U.)	Output (mg.)
1	12.5	90.0	60.0	196.6	63.0	53.0	121.5	33.0	0.0	51.6
1	25.0	41.0	14.0	20.9	4.0	0.0	0.0	0.0	0.0	0.0
2	50.0	116.5	52.0	245.6	13.0	21.0	9.2	0.0	0.0	0.0
1	67.5	67.0	53.0	80.4	11.0	0.0	0.0	0.0	0.0	0.0
2	75.0	86.5	58.0	173.8	18.5	22.0	21.6	15.5	12.0	13.5
Average for all		80.2	47.4	143.4	21.9	19.2	28.6	9.7	2.4	13.0

hourly totals were calculated from these figures (Table 1).

Only patients who had free acid in every 15-minute specimen of the one-hour basal specimen, and whose levels were above 50 mg. free hydrochloric acid, were considered candidates for the oral evaluation of the drug.

To further evaluate the drug, it was deemed advisable to observe its effect when given parenterally (Table 2). For comparison, seven patients were given hydroxyzine intramuscularly, and the experiment repeated, with similar and confirmatory results. Both distilled water and saline were administered in the same manner to several patients to rule out the effect of a placebo; no diminution in free acid was observed.

DISCUSSION

It has been shown in the Pavlov-fistula dog and in the pyloric-ligated rat that meprobamate, chlorpromazine, prochlorperazine and promazine decreased the total volume of gastric secretion; however, there was some increase in the free acidity following administration of these agents.[11] Hydroxyzine at a dosage of 1 mg./kg. of body weight suppressed gastric secretion, while reserpine increased both the volume and free acidity.

The mechanism of the antisecretory effect of hydroxyzine suggests that it is due to a reduction of excitability in certain areas of the central nervous system, including the hypothalamus.[12]

Chlorpromazine given intramuscularly reduced the volume of gastric secretion but did not significantly change the free acidity.[4] Reserpine increased both the volume and the free acidity.

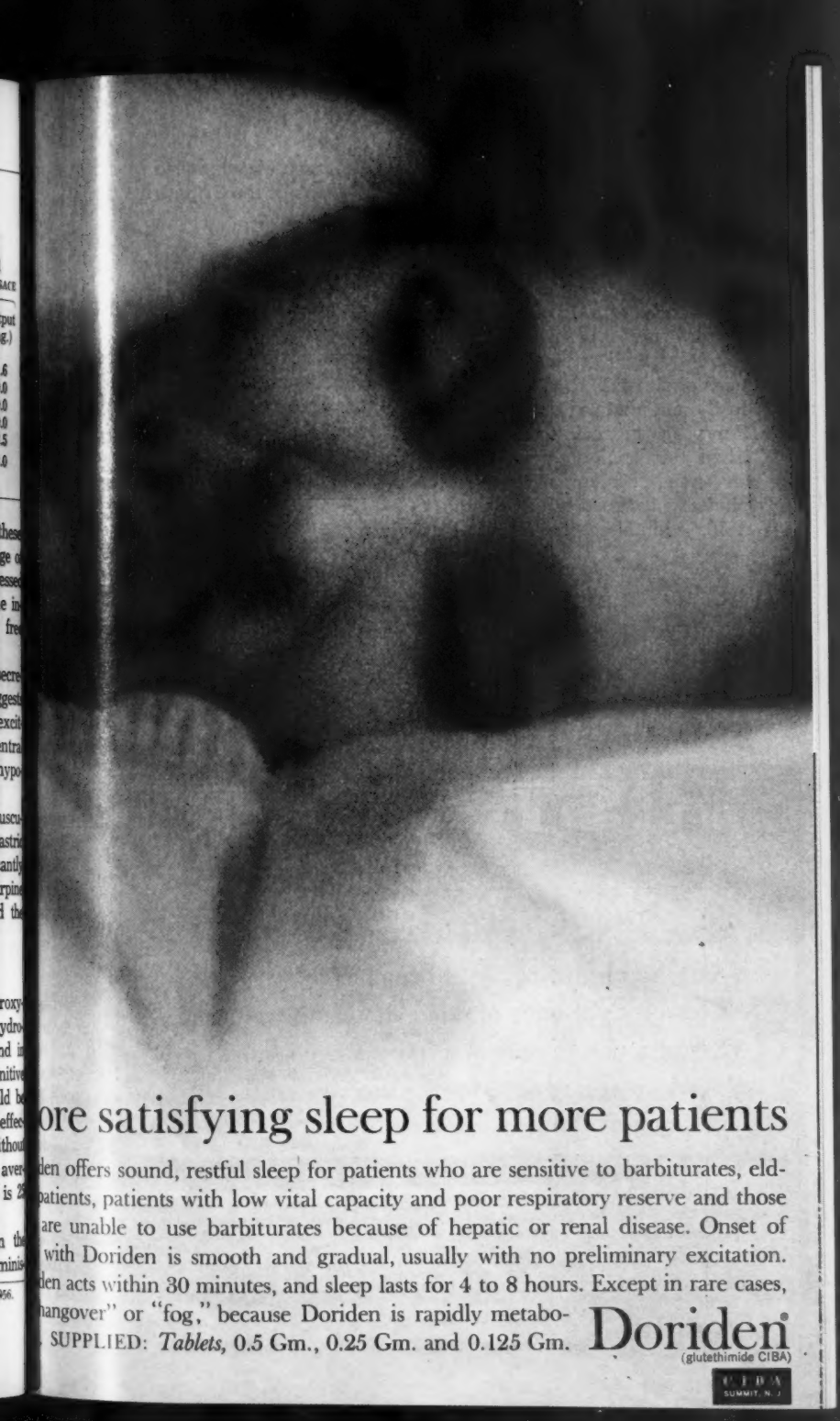
RESULTS

This study indicates that hydroxyzine causes no rise in gastric hydrochloric acid and/or volume, and in the majority of patients a definitive decrease was observed. It should be mentioned that up to 130 mg. effectively suppressed secretion, without significant side reactions. The average dosage in clinical practice is 25 mg. every four hours.

The results indicate that, in the majority of patients, orally adminis-

11. Harrisson, J. W. E., et al., The Effects of Several Ataractic Agents Upon Gastric Secretion in the Dog and Rat. Presented at Fourth Pan American Congres of Pharm. & Biochem., Nov., 1957.

12. La Barre, J., *C.R. Soc. Biol.*, 150:1807,1956.



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tered hydroxyzine produces a diminution of gastric acidity from the initial basal levels. When administered parenterally, comparable results were observed.

It has been noted that the spasmogenic effect of a 1:5 million solution of serotonin is completely counteracted by hydroxyzine in concentrations of either 1:100,000 or 1:200,000. In the anesthetized dog, hydroxyzine, 5 mg./kg., given intravenously, abolished duodenal activity induced by serotonin, histamine and posterior pituitary extract.[8] Hydroxyzine (1.0×10^{-7}) inhibited the contractions of the rat uterus induced by serotonin.[13]

None of the 21 patients was noticeably sedated.

SUMMARY

A total of 28 patients with high levels of free hydrochloric acid were given hydroxyzine (21 orally and 7 intramuscularly). In the majority of patients, a definitive lowering in gastric acidity and volume of secretions was noted. Hydroxyzine appears to be of value as an adjunct to recognized forms of ulcer therapy.◀

13. Hutcheon, D. E., et al., Pharmacology of Hydroxyzine. Presented at Meeting Am. Soc. Pharm. & Exper. Therap., Nov., 1956.

ORIGINAL ARTICLE

Treatment of Acute Infectious Diarrhea

Results from this medication could be termed excellent in view of the rapid recovery of 88% of 25 patients with severe infectious diarrhea

IRWIN W. WINFIELD, M.D.,* *Newark, New Jersey*

The acute infectious diarrheas, as very clinician has experienced, do ot respond favorably to the simple ntidiarrheal preparations such as aolin and pectin. In such cases, it necessary to clear up the bacterial fection causing the disturbance be- re an abatement of symptoms can e expected.

This can be accomplished by medi- ation with one of the antibiotics[1,2] ctive in the intestinal tract. It is lso necessary to administer an anti- iarrheal and usually an antispasmodic to relieve the accompanying abdominal cramps.[3] In addition, the patient often exhibits anxiety which requires sedation. Multiple medication is to be avoided when possible, as in many instances this only adds to the patient's apprehension.

USE OF A NEW PREPARATION

With this in mind the author used a comparatively new medication combining kaolin, pectin, natural belladonna alkaloids and phenobarbital with neomycin sulfate.†

Associate Attending Physician, Medical Department, Hospital of St. Barnabas and for Women and Children, Newark, N.J.; Staff, Newark Presbyterian Hospital; Director, Student Health Services, Newark College of Rutgers University.

1. Stulberg, C. C., et al., *Pediatrics*, 14:133,1954.
2. Wheeler, W. E., & Wainerman, B., *Pediatrics*, 14:357,1954.

†*Donnagel® with Neomycin*, A. H. Robins Company, Richmond, Virginia. This preparation contains per 30 cc.: Neomycin sulfate, 300.0 mg. (as neomycin base, 210.0 mg.); kaolin, 6.0 gm.; pectin, 142.8 mg.; dihydroxy-aluminum-amino-acetate, 0.25 gm.; hyoscyamine sulfate, 0.137 mg., atropine sulfate, 0.194 mg., hyoscine hydrobromide, 0.0065 mg., phenobarbital, 16.2 mg.

3. Cheever, F. S., *Bull. New York Acad. Med.*, 31: 611,1955.

A total of 25 patients ranging in age from postpartum to 67 years of age was treated with this therapeutic agent after admission to the St. Barnabas Hospital. Although varying considerably in etiology, all cases exhibited typical symptoms of acute infectious diarrhea. Six patients ranged in age from birth (premature) to nine years; seven were in the 18-35 year group; five between 35 and 50, seven between 50 and 67 years of age.

In all cases treated, the following dosages were prescribed: Adults, 1-2 tablespoonfuls; children over two years, 2-4 teaspoonfuls; infants, two years and under, 1-2 teaspoonfuls. All dosages were administered at four hour intervals.

ETIOLOGY

In all these cases the symptoms were diagnostic of infectious diarrhea or dysentery. Case histories revealed a wide variety of etiologies, including 12 patients with upper respiratory infections; two with food poisoning, and one each of the following: acute myelocytic leukemia; gastro-colic fistula and congenital atresia of bile duct; gastric ulcer with spastic colitis; gastrectomy (diarrhea on tenth postoperative day); hypertension and duodenal ulcer with enlargement of the heart and congestive failure; infectious mononucleosis; pregnancy complicated by presence of B. coli and staphylococcus aureus; pregnancy complicated by excessive vomiting and mild nasopharyngitis; ulcerative colitis (grade I); ulcerative colitis (grade IV) and vermicularis.

Immediately after admission, stool specimens were taken in each case. Cultures revealed the presence of the following organisms:

Culture	Number of Cases
B. coli	18
Streptococcus fecalis	11
Staphylococcus aureus	3
Streptococcus hemolyticus	2
Alpha-streptococcus	1
B. aerogenes	1
Dysentery bacillus, Shiga group	1
Endamoeba histolica	1
Micrococcus catarrhalis	1
Vermicularis	1

NOTE: In a number of instances, examination of cultures from the stools revealed multiple organisms, particularly B. coli and streptococcus fecalis.

DURATION OF TREATMENT

Diarrhea was controlled in 22 of the 25 cases in an average of 5+ days. The shortest time required for return to normal bowel habits was 1½ days, the longest 14 days. Criteria for determining the effectiveness of the treatment were the return to normal bowel habits with consistency and character of stool similar to that experienced before the onset of the attack.

COMPLICATIONS

These arose in 5 instances. One patient, with a history of chronic congestive heart failure on an arteriosclerotic basis, developed a severe tachycardia. As this condition might have resulted from the belladonna derivatives in the medication, it was discontinued. In four cases, an overgrowth of candida albicans was reported. These were subsequently cleared with mycostatin.

RESULTS

Failure occurred in three cases. One did not respond at all to the medication. In the second instance the drug was withdrawn when tachycardia developed, although the bowel movements were materially reduced in the 18 hours during which he was under treatment. The third failure

occurred in a premature newborn with serious congenital malformations.

There were 3 deaths while this group was under treatment, all due to serious conditions present before the onset of the diarrhea:

1. The newborn mentioned in the preceding paragraph. Autopsy revealed congenital gastro-colic fistula and atresia of the bile duct.
2. Acute myelocytic leukemia.
3. Uremia complicated by hypertension and severe duodenal ulcer.

CONCLUSION

Twenty-five cases of acute infectious diarrhea ranging in age from birth to 67 years, with greatly varying etiologies, were treated. In 22 of the 25, diarrhea was brought under control in an average time of just over five days. Stool cultures and blood counts, made on admission and in each case just prior to the time of discharge from the hospital, indicated either marked improvement or complete lack of further bacterial growth.

Except in cardiac conditions which might be adversely affected by the belladonna derivatives, or where there is sensitivity to them, the drug appears safe as well as unusually effective.◀

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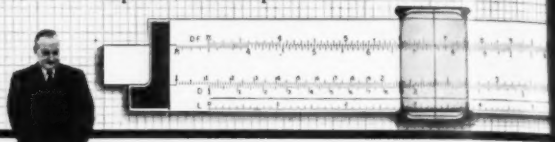

in the patient:

95% effective in published cases[1-8]

Conditions treated	No. of Patients	Cured	Improved	Failure
ALL INFECTIONS	**559**	**448**	**80**	**30**
Respiratory infections	**258**	**209**	**31**	**18**
Pharyngitis and/or tonsillitis	65	58	5	2
Pneumonia	90	66	17	7
Infectious asthma	44	38	–	6
Otitis media	31	23	2	–
Other respiratory (bronchitis, bronchiolitis, bronchiectasis, pneumonitis, laryngotracheitis, strep throat)	28	17	7	4
Skin and soft tissue infections	**230**	**191**	**38**	**1**
Infected wounds, incisions and lacerations	41	33	8	–
Abscesses	51	43	8	–
Furunculosis	58	51	6	1
Acne, pustular	43	28	15	–
Pyoderma	19	19	–	–
Other skin and soft tissue (infected burns, cellulitis, impetigo, ulcers, others)	18	17	1	–
Genitourinary infections	**28**	**19**	**3**	**6**
Acute pyelitis and cystitis	10	8	2	–
Urethritis with gonorrhea or cystitis	8	8	–	–
Pyelonephritis	4	1	–	3
Salpingitis	5	1	1	3
Pelvic inflammation with endometriosis	1	1	–	–
Miscellaneous (adenitis, enteritis, enterocolitis, subacute bacterial endocarditis, fever, hematoma, staphylococcus carriers, osteomyelitis, tenosynovitis, septic arthritis, acute bursitis, periarthritis)	**42**	**30**	**8**	**4**

ORIGINAL ARTICLE

The Nervous Stomach

The patient with an irritable bowel presents a challenge in diagnosis and treatment that is unique

HARRY J. KANIN, M.D., *Milwaukee, Wisconsin*

DISTURBED PHYSIOLOGY

An emotion-provoking situation or idea is perceived in the cells of the frontal lobe cortex. A message is sent to the rhinencephalon, or olfactory bulb, which stimulates the specific nervous impulse we call emotion. The impulse goes back to the frontal cells where it is consciously felt as an emotion—rage, fear, pleasure, amusement, frustration.

At the same time, the impulse goes to the brain centers that control the visceral response to emotion. The median and lateral nuclei of the thalamus control the tonus of striated muscle. Prolonged stimulation of these nuclei results in tension headaches.[1] The stimulated hippocampal gyrus of the temporal lobe gives rise to the specific emotion of anxiety with its physical features of dilated pupils, perspiration, tachycardia, and loose stools.

The brain center that controls the response of the gastro-intestinal tract to emotional stimuli is the hypothalamus. After receiving its message from the olfactory bulb, this center sends messages to sympathetic and parasympathetic brain centers and to the pituitary. Stimulation of the posterior pituitary results in alteration in the rate of release of anti-diuretic hormone, with resultant increase or de-

1. Weisman, A., & Cobb, S., Diseases of Digestive System, Third Edition, pp. 209-220, 1953.

crease in urination.[2] Stimulation of the anterior pituitary causes release of adrenal-cortical-stimulating-hormone, resulting in the stress reaction, with its concomitant increase in the production of acid peptic juice by the stomach.[3]

PRODUCTION OF SYMPTOMS

The most important action of the hypothalamus is stimulation of the vagus nerve. The vagus controls gastro-intestinal motility and gastric secretion; its stimulation results in increased secretion of acid peptic juice, relaxation of gastrointestinal sphincters, and increased tonus of the smooth muscle lining the bowel. When, in response to excessive stimulation by the hypothalamus, the vagus works too hard, the resultant symptoms depend upon which function is most disturbed. This varies from patient to patient, and in the same patient from time to time.[4]

If the smooth muscle lining the esophagus goes into excessive contraction, the result is functional dysphagia. If the normal propulsive contractions of the small and large intestines increase, and at the same time the gastro-intestinal sphincters overrelax, the result is diarrhea. If the intestinal tonus increases to the extent that the lumen is occluded, spastic constipation results.

Spasm is frequently localized to the sigmoid colon. This causes constipation and, frequently, pain in the left lower quadrant of the abdomen. The colon proximal to the spastic occlusion may distend, resulting in a sense of fullness and a dull ache in the right lower quadrant. The stomach may distend reflexly, causing a sense of epigastric fullness and post-prandial distress. Many of these people are air-swallowers, and belching is common. Spasm of the duodenum results in epigastric pain so like that of peptic ulcer that differentiation can be made only by x-ray examination.

PSYCHOLOGICAL CONSIDERATIONS

The irritable bowel is one of the indicators of the life situation. Aggravation of symptoms can usually be correlated with a specific event or change of circumstance, usually so promptly and so clearly that the patient will readily accept the relationship when it is pointed out to him. In this, the irritable-bowel syndrome differs from deeper neuroses, in which the symptoms are caused by events of the past, rather than the present.

IN MEN, WORK TROUBLES

In men, the trouble is usually associated with their work.[5] An unpleasant boss, a quarrelsome fellow employee, a job that demands high output at a fast pace, a change of job, and, ironically, a promotion, may aggravate their symptoms. Salesmen are particularly prone to develop this disease, but it has been seen in factory workers, school teachers, typists, and those in many other occupations. The common denominator seems to be a tendency to take their work very seriously, with a conscientious desire to do a perfect job.

IN WOMEN, MARRIAGE TROUBLES

In women, the cause is usually in their marriage. These are usually very feminine, dependent women who are not receiving either the affection or the firm direction that they need. One exception to this rule are the women who work in factories

2. Altschule, M., *New England J. Med.*, 476,1954.
3. Gray, S., Textbook of Medicine, Second Edition, Harrison, p. 1549.
4. Thomas, J. E., *J.A.M.A.*, 157:209,1955.
5. Kanin, H., *Wisconsin M.J.*, 56:497-500,1957.

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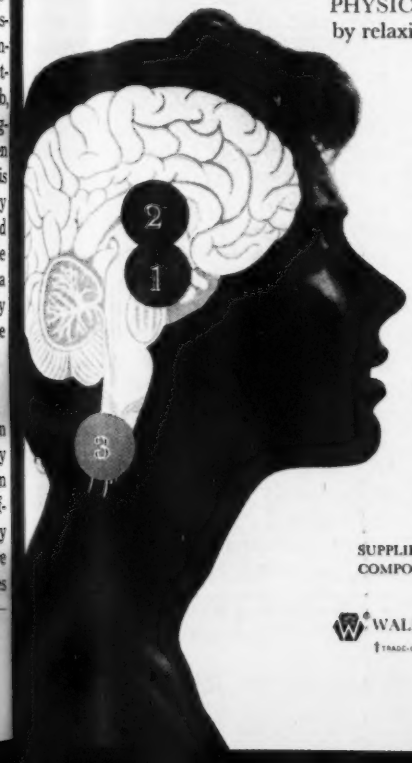

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with a room-full of other women. In such an assemblage there will usually be one or two chronic troublemakers. Some of the co-workers are bound to develop nervous stomachs, and, almost certainly, the foreman will too.

DIAGNOSIS

There is usually nothing in the history to differentiate this syndrome from organic disease. However, there are a few points which, while not diagnostic, are characteristic. One is that patients with even the most severe functional diarrhea do not lose weight. Weight loss is indicative of organic disease. Fatigue is a feature of every case. These patients are tired from the moment they arise in the morning. A night's rest will usually relieve fatigue caused by organic disease. A third point is exacerbation of symptoms after eating, due to vagal stimulation. Another point is inappropriate and excessive concern over a symptom which is neither very painful nor disabling. These four observations may lead the physician to suspect that the patient has a "nervous stomach"; establishment of the diagnosis will require a complete physical and proctoscopic examination, blood count, stool studies, and gastrointestinal x-rays. It is only after such a complete examination that some patients will accept the diagnosis of "nervous stomach," and it is only after such an examination that the physician is justified in making this diagnosis.

AN ILLUSTRATIVE CASE

A 20-year-old white man complained of diarrhea of 2 months' duration, and a 20 lb. weight loss during that time. He had been married for one year and had a 6-month old child. The marriage had taken place in order to give legitimacy to the child. He and his wife were unhappy and incompatible. His job was a routine one which he detested, and at which he remained only because of the necessity of supporting his family. Physical and proctoscopic examination, and gastrointestinal x-rays were negative. While one could readily diagnose an irritable-bowel syndrome, the weight loss was not in accord with the diagnosis of functional diarrhea. Stool examination revealed amebiasis. Following a course of therapy for the amebiasis, the patient recovered completely.

This case is cited to emphasize the point that the diagnosis of irritable-bowel syndrome is established only by exclusion.

TREATMENT

The first interview is extremely important. Good rapport must be established between patient and doctor, or therapy will be unsuccessful. The best way to establish rapport is for the physician to be patient, interested, and sympathetic.[6] Let the patient tell his story without interruption, then ask the pertinent questions. Inquiry into the patient's personal life or emotional state is deferred until the end of the interview. Emotional difficulties are apt to be denied on the first visit, only to be revealed on subsequent visits. The patient should never be pressed, but should be allowed to tell his story when he is ready. On the other hand, if allowed to tell too much too soon, the patient may subsequently regret his verbosity, feel embarrassed, and not return.

Next a complete physical examination, including rectal is done, after

6. Bird, B., Talking With Patients, J. B. Lippincott Co., 1955.

hich the patient is informed that the ysical examination is negative, and at x-ray and laboratory studies will e necessary to establish the diagnos. After completion of these studies, e is to return for another interview, hen he is informed of his diagnosis. use the following technique:

"How have you been feeling since saw you last?" I then listen to anher recital of the patient's symptms, interjecting a question or two show interest. I then inform him at no organic disease has been und. I tell him that his symptoms e quite common, and that they are ually caused by nervous tension. is explained that the digestive tract a long hollow tube made of muscle, at the working of this muscle is ntrolled by the nervous system, and at nervous tension will cause this uscle tissue to work improperly and ovoke symptoms. It is stressed that s symptoms are real, not imaginary, d that they are caused by a disturbce in gastrointestinal function.

The patient usually accepts this gnosis. If he has not already done at this point he will frequently oceed to unburden himself about e circumstances or individuals disbing him. If he rejects the idea of nctional illness, do not attempt to rsuade him, but proceed to a dission of dietary and medicinal ther-y.

MMON SENSE SUGGESTIONS

This is all that should be done in psychological management of the tient with an irritable bowel. This not a deep-seated neurosis, but ther an abnormal physiological reonse to normal tensions.

A bland diet is a mainstay of treatent. Fatty and greasy foods, raw its, vegetables and spicy foods apparently increase the work of a spastic bowel to the point of causing distress. Avoiding these foods is a simple and effective way of ameliorating symptoms.

DRUGS

Drug therapy varies in response to the symptoms. Tranquilizers are more effective than the barbiturates. Anticholinergic drugs are very useful in diarrhea, as are combination preparations.[7] If the stools are very loose, Cellothyl — 4 tablets with water four times daily — is used to provide a stool of normal consistency.

In spastic constipation, no strong anti-cholinergic drugs are given. Bentyl in 10 mg. strength is used and the patient placed on a program of bowel training consisting of attempting a bowel movement at the same time every day, preferably after a meal, to take advantage of the vago-vagal reflex. This should be done regularly, whether or not the urge is felt. After a few months a regular habit will be established. In addition, the patient is instructed to take an abundance of fluids, to keep the stool soft. Tranquilizers are also useful in patients with this symptom. Symptoms resembling those of peptic ulcer should be treated exactly as an ulcer is treated.

PROGNOSIS

Complete and permanent cure cannot be expected in this condition. The patient cannot change his basic personality, and his life will always be full of tensions. However, by adhering to the program of dietary and drug therapy and superficial psychotherapy, he can be kept reasonably comfortable most of the time.◀

7. Kirsner, J. B., & Palmer, W., *Gastroenterology*, 34:491,1958.

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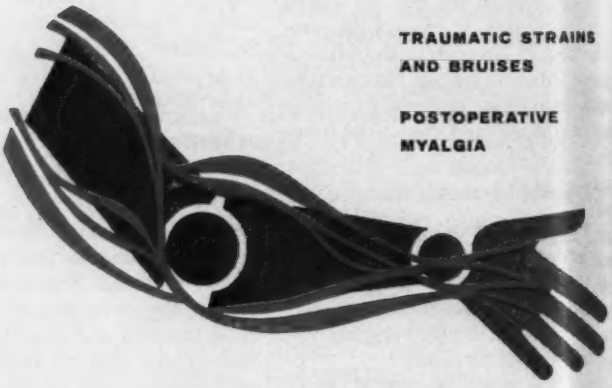

ORIGINAL ARTICLE

Silent Prostato-Vesiculites in Traumatic Backache and Sciatica

Thorough urologic investigations may locate the causes of low-back pain and sciatica, and prevent needless orthopedic or neurologic procedures

E. R. LEIKIND, M.D., and H. C. HARLIN, M.D., F.A.C.S.,*
New York, New York and *Brooklyn, New York*

The intmiate relationship between prostato-vesiculitis and lumbo-sacral, sacro-iliac and sciatic pain is well established. Since 1913, when it was first urged that the prostate and the seminal vesicles be examined in any painful condition between the diaphragm and the toes,[1] more than 50 publications have recorded a high incidence of prostato-vesiculitis in low-back pain. These present authoritative estimates ranging from 75 to 90 per cent of prostato-vesicular disease as the pathogenic factor in these cases.[2] Many manifestations have been previously reported and the segmental areas of referred pain have been charted in accordance with the concepts of Head and Mackenzie.[3]

THE "OBVIOUS" CAUSE NOT ALWAYS THE REAL CAUSE

The underlying pathogenic factor is not generally recognized when low-back pain develops immediately after lifting, pulling, pushing, bending, twisting or slipping. The accident is blamed as the obvious cause, and there appears to be no good reason

* Director of Urology Long Island College Hospital, Brooklyn, N. Y.
1. Young, H. H., *J.A.M.A.*, 61:822,1913.
2. Leikind, E. R., *Med. Times*, 85:632,1957.
3. Harlin, H. C., *J.A.M.A.*, 143:880,1950.

for looking further and examing the prostate and vesicles. Competent palpation of these organs in such cases will often reveal evidence of their congestion or tumefaction, and further study will then show that the pressure exerted thereby on local nerve plexuses transmits spasmogenic reflexes which manifest themselves as pain in the lumbar or sacral area, with possible involvement of the sciatic nerve. The physical strain immediately preceding the onset is in many cases only the precipitating factor of the low-back pain.

Dysuria may be slight or even absent, so that the appellation "silent prostato-vesiculitis" precisely describes the condition.*

REFLEXES EMANATING FROM PROSTATO-VESICULAR CONGESTION

Direct proof that low-back pain is a referral from the prostato-vesicular area can readily be obtained, in many cases, by the almost instantaneous therapeutic response to massage of the prostate and stripping of the seminal vesicles.

LOW-BACK PAIN OFTEN EXTENDS ALONG THE SCIATIC NERVE

Many of the cases of low-back pain become complicated by the extension of the reflex along the sciatic nerve and this serves to explain the frequent complaints of sciatica.

In our opinion there are two groups of factors which can reasonably be assumed to be responsible for the reflexes:

1. Distention of the prostate and the vesicles by congestion due to sexual abuse, excessive indulgence in alcohol, prolonged sitting in travel, or invasion from infectious foci.

2. Engorgement of periprostatic blood vessels through interference with venous circulation due to concomitant reflex spasm in the colon.

As pressure on local nerve plexuses is intensified, it may become a trigger mechanism capable of transmitting reflexes to the lumbo-sacral and sacro-iliac regions, frequently involving the sciatic nerve.

Low-back pain may be associated with a spastic colon.[4]

It has frequently been observed that the back pain is worse in the morning, gradually lessening as the day advances. During the night accumulation of feces and gas exerts mechanical pressure against the veins in the lower bowel, thus blocking venous return through the middle hemorrhoidal vein. This adds to the pressure on the prostate and the vesicles, and on the peri-prostatic and peri-vesicular nerve plexuses. The morning defecation to some extent relieves this pressure, so that the venous return from the prostate and the vesicles is facilitated. Perhaps a contributory cause is that the overloaded and gas-distended rectum displaces itself deeply against the prostato-vesicular structures, aggravating externally the pressure on the local nerve plexuses.

With a progressive pathologic process the backache may become constant and radiate down the sciatic nerve. The picture may closely simulate a slipped disc, which explains the frequency of hospital discharge diagnoses proved erroneous by the subsequent recoveries of the patients under appropriate treatment of the prostate and the vesicles.

DIAGNOSES

Careful inquiry should elicit in-

*Singer and many others have pointed out that seminal vesiculitis usually accompanies prostatitis, so that the term "prostato-vesiculitis" is preferable to "prostatitis."

4. Landry, W. J., et al., *J. Louisiana M.A.*, 107: 484,1955.

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formation on urinary frequency, burning, dribbling, nocturia, slowing or forking of stream, episodes of retention, urethral discharge, swelling around the testicles; premature or painful ejaculation, blood in ejaculate, decreased libido, impotence, effects of intercourse on backache, either prompt, or delayed; hemmorrhoids, bleeding, fissure, pruritus ani, mucoid discharge, anal spasm, rectal pain following defecation; regularity, frequency, size, shape, consistency, color and odor of stools.

The patient should be asked whether he has in the past undergone treatment for such disorders. Patients are apt to minimize symptoms which are slight in comparison with their intense back pain, and may even be impatient when the physician dwells on points which they regard as inconsequential.

EXAMINATION

Rectal palpation may disclose seminal vesicles ranging from painful and readily palpable types to deeply imbedded and less tender forms which can perhaps be palpated only with extensive experience.

When no prostatic abnormality is evident, the prostate may be small and yet be the cause of the trouble. A copious secretion may present itself at the urinary meatus immediately upon stripping, even before the prostate is emptied, or the vesicles may yield a viscid fluid of color from milky to yellow, or of both types. In other cases vesicular fluid appears only after a number of vigorous strippings, when the ejaculatory ducts have opened. Occasionally blood appears in the secretion, indicating acute congestion of the seminal vesicles.

MANAGEMENT

The diet should be balanced, supplements of vitamins and mineral given in effective dosage, and overeating causing constipation and flatulence should be avoided. Coffee and tea in moderation are permitted, but alcohol prohibited because of its irritating effect on the genito-urinary tract. Intestinal stasis is usually corrected by the massage-stripping. Should it persist, it is best relieved by milk of magnesia—a teaspoonful dissolved in a glassful of water every six hours. A low enema may afford temporary relief of pain by the expulsion of gas and feces.

Sexual excitement must be abstained from until definite improvement has been attained; then normal moderate intercourse prevents secretory congestion.

The patient should not be exposed to colds and any infection should be treated promptly. Foci of bacterial invasions (teeth, tonsils, sinuses) should be eliminated.

Backboards or braces can at best give only temporary relief; they cannot correct the neglected prostatovesiculitis.

RESULTS OF CONSERVATIVE TREATMENT OF TRAUMATIC BACKACHE

The following brief summaries of hospital records are illustrative.*

Case 1

A traveling salesman with low back pain of eight years' duration caused by carrying heavy sample cases. X-ray showed mild lumbar tilt to the right with increase of lumbar lordosis. Diagnosis: Degenerative disc at two levels with herniation at either or both sides not excluded.

Case 2

A factory worker with pain across

*In each instance, the patient was found to have prostato-vesiculitis which responded to appropriate treatment with relief of symptoms.

back of 2½ years' duration. Forward bending markedly restricted, Lasegue on left side positive. Later examination of the lower spine showed a scoliosis and tilt to the right in lumbar region; this was not present originally. Lumbosacral joint narrowed. Diagnosis: Low-back pain. Plaster jacket applied. No relief three weeks later. Spinal fusion advised.

CASE 3

A postal clerk, first admitted with severe low-back pain radiating to the right leg which came on after heavy lifting. Returned six years later reporting similar episodes; pain now extending to back of right thigh. Neurological findings herniated disc, myelogram normal. Latest attack of 1½ months duration with pain on both sides of back worse by coughing, sneezing or straining. Orthopedic diagnosis lumbo-sacral arthritis with definite degenerative changes. Fusion refused by patient.

CONCLUSIONS

Routine examination in cases of low-back and sciatic pain should include the prostate and the seminal vesicles. Competent massage-stripping may immediately reveal the cause of the disability and point out the indicated treatment. When there are grounds for suspecting that other parts of the genito-urinary apparatus may be involved (bladder neck, verumontanum, posterior urethra), thorough urologic investigations should be carried out. Occasionally prostatic calculi are found, or congenital narrowing of the urinary meatus or urethral stricture impeding urinary flow so as to produce bladder neck congestion and vesical trabeculation. Uretero-renal pathology may also be present.

In the great majority of cases, physical strain resulting from an accident has merely been the precipitating factor of the disability.

Only when negative findings exclude any urolgic basis for low-back pain and sciatica should the conclusion be reached that the condition is wholly traumatic, and the patient be subjected to neurologic or orthopedic procedures. The frequent rehabilitation of incapacitated workers will constitute sociological gains, immense savings in insurance costs, and splendid medical achievements.◀

Diabetes: Response to Oral Therapy

A group of 46 adult stable and unstable diabetics, including some having had insulin injections for 20 years and those having been unresponsive to previous oral drugs were treated with a new oral hypoglycemic agent (DBI). Of the group, 30 were able to control their diabetic condition with this agent, 12 of 31 formerly treated by insulin injections were able to switch successfully to the oral form, and 7 improved control with the oral form plus injections. In 8 the drug was not effective. The drug, one of the biguanides, differs in chemistry from the two older sulfonylurea drugs used in the treatment of oral diabetes. Although the compound has been found to lower blood sugar in diabetics, it does not do so in normal individuals. Gastrointestinal symptoms, vertigo, and headaches, seen in 9 patients, diminished on withdrawal. Harmful effects on bone marrow, liver, kidney or thyroid tissue have not been noted.

Sugar, S. J. N., et al., *M. Ann. District of Columbia* 28:426-431,1959.

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in angina pectoris

NIAMID, in intensive clinical tests, has proved to have a high degr of safety and to be a valuable adjunct to the management of t anginal syndrome. NIAMID produces striking symptomatic impro ment in angina patients—markedly reduces the pain, severity a frequency of anginal episodes, reduces nitroglycerin requirement and provides an increased sense of well-being. Since dramatic i provement is seen in some patients, it is wise to advise the patie against overexertion—his disorder still holds potential dange despite relief of symptoms.

DOSAGE: Start with 75 mg. daily in single or divided doses. After week or more, adjust the dosage, depending upon patient response, steps of one or one-half 25 mg. tablet. Once improvement is seen, grad ally reduce dosage to the maintenance level. Many patients respond NIAMID within a few days, others in 7 to 14 days. A few patients m require as much as 200 mg. daily over a longer period of time bef significant improvement is seen.

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ORIGINAL ARTICLE

Clinical Differentiation of Coronary Arterial Disease

Significant points in the differential diagnosis of coronary artery disease are presented

JAMES F. CRENSHAW, M.D.,* *Birmingham, Alabama*

Usage has made the term coronary arterial disease synonymous with coronary heart disease, as there is no clinically significant disease of the coronary veins.

The three usually recognized stages of coronary heart disease are:

1. Angina pectoris.
2. Coronary insufficiency or the intermediate stage (prolonged anginal pain with little or no tissue necrosis).
3. Acute coronary thrombosis with myocardial infarction.

Practically all instances of angina pectoris and myocardial infarction have as their basis coronary insufficiency. All grades of clinical manifestations are possible, depending upon the establishment of compensating anastomotic vessels. All phases are due to myocardial anoxia and have as common features chest pain and the possibility of sudden death, often due to ventricular fibrillation. In myocardial anoxia the oxygen supply to the heart is interfered with by alteration of one of the following mechanisms:

1. Caliber of the coronary arteries.
2. The heart rate.
3. The blood pressure.

*From the Seale Harris Clinic, Birmingham, Alabama.

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4. The hemoglobin content of blood.
5. The oxygen saturation of arterial ood.[1]

Coronary occlusion may arise from thrombus, an embolus, or gradual rrowing of the vessel's lumen. The te of the occlusive process is of eater significance than the degree. llateral circulation from the numer- s small anastomotic arterial nches is the chief determinant of e clinical manifestations and ulti- te prognosis.

The most important cause of acute ocardial infarction arises from eromatous changes within the ves- l's lumen. There may be a gradual rrowing process, or a blood clot may rm at the sight of the atheroma. bendothelial hemorrhages in the lls of coronary vessels less fre- ently produce acute infarction of e myocardium. Rarely, causes oth- than atheromata produce myocardi- infarction or ischemia:

1. Aortic valvular disease such as rtic stenosis, subaortic stenosis or rtic insufficiency.

2. Coronary embolism which may e seen in chronic rheumatic mitral lvular disease or in bacterial endo- rditis.

3. Manifestations of systemic dis- se as in anemia, hypertension ,poly- teritis nodosa, rheumatic fever, rombotic thrombocytopenic pur- ra, and metastatic calcifications.

4. Narrowing of the coronary osti- n from disease of the aortic valve or e aorta.

5. Congenital disease of the coro- ry arteries, as coronary arteriove- us fistula and anomalous origin of e coronary artery from the pulmo- ry trunk.

6. Extreme bradycardia or tachycardia.

7. Severe hypotension as in surgical shock.[2,3]

It is to be remembered that coronary disease, even of severe degree, may be present without insufficiency of the blood supply to the myocardium. It has been demonstrated that temporary ischemia, even with acute vascular occlusion, may produce myocardial infarction which is similar to that occurring after permanent and complete coronary occlusion.[4]

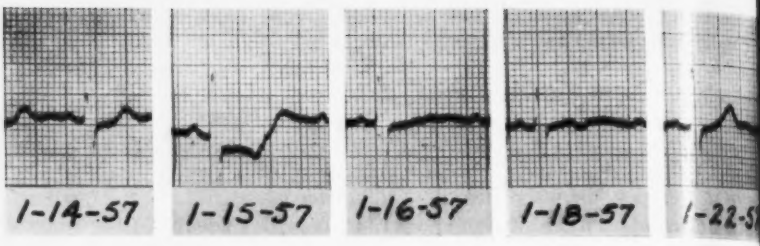
Acute coronary insufficiency has recently been emphasized as a distinct entity with predisposing and precipitating factors, a definite physiopathological mechanism, with characteristic location of the ischemia or necrosis in the subendocardium and a more or less characteristic electrocardiogram.[5]

The importance of coronary arterial disease is readily appreciated when one considers that one-third of men over the age of 35 and two-thirds of the men past 50 have a significant degree of atherosclerosis.

ANGINA PECTORIS

Angina pectoris, a strangling sensation in the chest, is produced by a temporary alteration between normal oxygen supply and oxygen need in the myocardium, and represents a momentary state of coronary insufficiency with ischemia. The disease is more common in males past 50 and is seldom seen in women before the age of 60 in the absence of hypertension or diabetes. Coronary arteriosclerosis develops more rapidly in the presence of

1. Harrison, T. R., *Principles of Internal Medicine.* Second Edition. The Blakiston Company, New York. 1955.
2. Edwards, J. E., *Mod. Concepts Cardiovas. Dis.*, 25:329-331,1956.
3. White, P. D., *Heart Disease.* Fourth Edition. The MacMillan Company, New York. 1955.
4. Blumgart, H. L. et al., *Tr. A. Am. Physicians*, 52:210,1937.
5. Master, A. M., et al., *Ann. Int. Med.*, 45:561, 1956.



Electrocardiogram showing progressive S-T segment and T wave changes seen in case of acute coronary insufficiency with myocardial ischemia. All leads are V_5.

hypertension. Factors tending to precipitate attacks of angina are emotion, the eating of heavy meals, and exertion, particularly over-exertion in cold weather. Hypoglycemia and the ectopic tachycardias are also aggravating forces. The characteristic pain of angina is a pressure or squeezing sensation in the substernal region, frequently described as burning or a sense of fullness, seemingly associated with indigestion, often radiating into the arms, neck, jaw, or shoulders. There are no specifically abnormal physical findings. The electrocardiogram taken at rest rarely shows changes. The Master two-step exercise test[6] is of some value, but the diagnosis rests largely on the history. The treatment consists of eliminating the precipitating causes, weight reduction in the obese, and nitroglycerin as needed for chest pain.

ACUTE CORONARY INSUFFICIENCY

Acute coronary insufficiency is thought by some to represent a distinct clinical entity produced by sudden temporary impairment of the coronary circulation sufficient to meet the needs of the myocardium. Studies involving young soldiers and cases of sudden death in the civilian population indicate that myocardial infarction occurs fairly commonly without evidence of thrombosis — that is, as the result of acute coronary insufficiency.[7-11]

Usually coronary insufficiency is accompanied by manifest coronary disease, but normal hearts may be affected by prolonged tachycardia or severe hemorrhage or shock. In the mild cases, no acute changes are produced in the myocardium, but subendocardial ischemia seemingly occurs producing the transitory electrocardiographic changes. With more prolonged ischemia, areas of necrosis are produced as small isolated microscopic foci or larger confluent or disseminated areas. The interventricular septum, the papillary muscles of the left ventricle and the subendocardial layer of the left ventricle are more commonly involved in this process, apparently because these areas are most distant from the larger coronary branches and are exposed to the greatest intramural pressure. Healing and fibrosis eventually occur in most of the necrotic areas. When a Q wave becomes evident with RST elevation,

6. Master, A. M., *Ann. Int. Med.*, 32:842,1950.

7. Friedberg, C. K., & Horn, H., *J.A.M.A.*, 1675,1939.
8. Cross, H., & Sternberg, W. H., *A.M.A. Int. Med.*, 64:249,1939.
9. French, A. J., & Dock, W., *J.A.M.A.*, 1944.
10. Master, A. M., & Auerbach, O., *U. S. Nav. Bull.*, 47:226,1947.
11. Yater, W. M., et al., *Am. Heart J.*, 36:683,1948.

New films for the surgeon

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by Louis J. Girard:

A detailed demonstration of a technic which is designed to anticipate and prevent many of the serious complications of cataract surgery. In addition to the procedure itself, the film covers preoperative preparation, the induction of anesthesia and akinesia, and postoperative care. Each step in the procedure is shown first from the operative site, and then (at greater magnification) from the surgeon's viewpoint.

16 mm., color, sound, 15 min.

TUCKING OF THE SUPERIOR OBLIQUE MUSCLE TENDONS

by Louis J. Girard:

A detailed demonstration of a technic of tendon shortening employed in the correction of hypertropia due to paresis of the superior oblique. In addition to the surgical procedure itself, the film outlines preoperative tests for differential diagnosis, postoperative care, and postoperative tests for evaluating the success of surgery.

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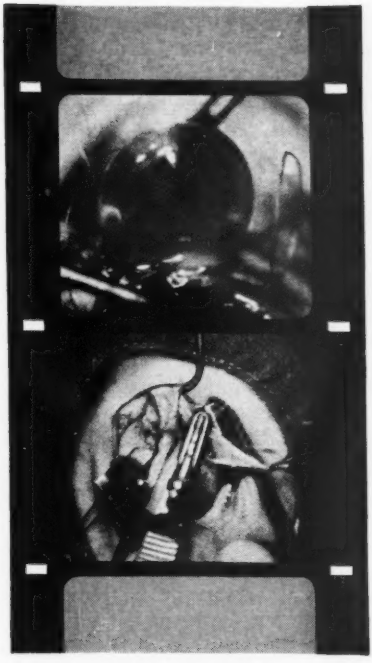


through-and-through infarct has occurred. Damaged hearts, for example, from coronary artery disease, aortic valvular disease, and hypertrophy are more prone to develop acute coronary insufficiency than is the normal heart. Congestive heart failure, prolonged tachycardia and anemia decrease the ability of the myocardium to compensate for inadequacy of the coronary flow. Coronary insufficiency and subendocardial necrosis may be induced or may occur spontaneously.

Among the factors which may induce coronary insufficiency are increased cardiac work, as in exercise, emotion, hyperthyroidism, fever and infection, and tachycardia; reduced coronary flow, as in acute hemorrhage, shock, paroxysmal tachycardia, congestive failure, aortic stenosis, or altered composition of the blood, as in anemia, asphyxia, and exposure to altitude.[5] The electrocardiogram may not be altered in acute coronary insufficiency. Usually, however, the tracing shows RST depression, T wave inversion, or both. Such changes produced by ischemia may last only several hours or days, but with definite subendocardial necrosis these abnormalities linger for weeks or longer. Q waves appearing in the rarer cases of coronary insufficiency indicate a through-and-through progression of the infarct. According to Burch, the earliest electrocardiographic change seen in coronary heart disease is lowering of the S-T segment or early portions of the ascending limb of the T wave.[12]

TREATMENT

In the treatment of induced coronary insufficiency, elimination of the precipitating factor is necessary. The alleviation of a severe prolonged tachycardia and the administration of blood and vasopressor drugs in shock and hemorrhage may be vital. Coronary insufficiency occurring spontaneously resembles a mild attack of coronary occlusion. The electrocardiogram is of invaluable help in differentiating between these conditions. Although coronary insufficiency occasionally causes sudden death, the prognosis is almost invariably better than that subsequent to occlusion. Bed rest is rarely indicated since chair rest generally suffices. Early ambulation and rest about the house is often adequate for healing purposes. The dangers of peripheral thrombosis are lessened by early mild activity. Most patients are completely recovered and back at work within a few weeks' time.

It is the opinion of some that anticoagulants are unnecessary since mural thrombi do not occur in coronary insufficiency. Others use anticoagulant drugs routinely, since an attack of acute coronary insufficiency may represent the premonitory phase of coronary occlusion. Since the first 48-hour period is the most critical, and since the evidence at hand does not allow safe prediction, it is logical to give such cases the benefit of anticoagulant therapy. In the hands of those qualified to handle these drugs, the risk is quite minimal.

ACUTE CORONARY THROMBOSIS

Acute coronary thrombosis with complete closure of the artery results in myocardial infarction. The classical symptoms are severe substernal pain which may be persistent, dyspnea, marked weakness, cyanosis, cough and palpitation. At times nausea, vomiting, and gas dominate the picture. The patient may suddenly collapse with an ashy appearance,

12. Burch, G. E., *J.A.M.A.*, 165:1781-1784,1957.

old sweat with a feeble, fading pulse. Temperature elevations, usually to levels of 100° to 101° F., depend on the size and duration of the infarct. The blood pressure may show a drop of 30 points or more in either systolic or diastolic readings. The pulse rate commonly rises to over 90 per minute. The heart sounds, in particular the apical, are frequently weakened. With left ventricular dilation and weakness, protodiastolic gallop rhythm is common. Extensive infarction or congestive failure may produce significant cardiac enlargement, either limited to the left ventricle or involving the entire heart. On the second or third day following the onset of symptoms in the case of a large infarction, a pericardial friction rub may be heard, disappearing in the first week. Arrhythmias seen in coronary heart disease are atrial fibrillation and premature beats.

If a patient survives for 48 hours, the chance for recovery is good. Death in the first few days is usually due to ventricular fibrillation, cardiac standstill or shock. It is in the period beyond the first week of the acute illness that the thrombo-embolic phenomena are prone to appear. Embolism may be pulmonary, cerebral, renal or in the extremities. Classic electrocardiogram patterns are usually manifest for anterior or posterior myocardial infarction. Specific patterns are also found for lateral wall and septal infarction, which is usually in association with anterior or posterior wall infarction. A typical electrocardiographic tracing exhibits Q waves and elevation of the RST segment with progression to T wave inversion. The leukocytes are mildly to moderately increased. By the end of the third or fourth day, the sedimentation rate rises. The serum transaminase (SGOT) activity increases 2 to 20 times following an acute myocardial infarction.[13,14] This test depends on the enzyme's being discharged from injured heart muscle into the blood stream. Other tests which are sometimes of value are the serum cholesterol and alpha-beta protein patterns. Changes in the C-reactive protein and fibrinogen are known to occur.

DIFFERENTIAL DIAGNOSIS

Acute abdominal conditions, such as gallstone colic, pancreatitis, and perforated peptic ulcer must be seriously considered, as they often closely mimic a coronary episode. Also to be differentiated are acute myocarditis, pulmonary embolism and dissecting aortic aneurysm. Less commonly, mediastinal emphysema may be confused with a coronary attack, also acute pericarditis.

COMPLICATIONS

The following complications may be encountered in acute coronary thrombosis with myocardial infarction:

1. Shock
2. Cardiac arrhythmias, in particular atrial fibrillation and premature beats
3. Congestive heart failure
4. Thromboembolic phenomena involving the pulmonary, cerebral, renal systems and the extremities
5. A second acute myocardial infarction
6. Rupture of the heart
7. Rupture of a papillary muscle
8. Rupture of the interventricular septum
9. Ventricular aneurysm
10. Hemopericardium, from the use of anticoagulants in particular

13. La Due, J. S., & Wroblewski, F., *Circulation*, 11:871-877,1955.
14. La Due, J. S., *J.A.M.A.*, 165:1776-1780,1957.

11. Skeletal pain as seen in the shoulder-hand syndrome.

SPECIAL TREATMENT CONSIDERATIONS

Of great importance in the treatment of acute myocardial infarction is the controversial issue of anticoagulant therapy. Always requiring anticoagulants is the so-called poor risk group, the criteria for inclusion in this group being:

1. Chest pain unrelieved by opiates
2. Severe or persistent shock
3. Previous myocardial infarction
4. Congestive heart failure
5. Gallop rhythm
6. Cardiac enlargement of significant degree
7. Cardiac arrhythmias including atrial fibrillation, paroxysmal ventricular tachycardia or intraventricular block
8. Thrombophlebitis, present or past
9. Extreme obesity
10. Diabetic acidosis
11. Polycythemia

It would appear logical that since the first 48 hours after the onset of acute myocardial infarction are the most critical in terms of prognosis, and since the heart's fate is not always predictable by any known standards of clinical test or judgment, anticoagulant therapy would be in order for all cases. Wright[15] and his followers adhere to this belief, but Russek[16] is of the opinion that he can accurately enough predict the "good risk" patients and justifiably withhold anticoagulants from this group.

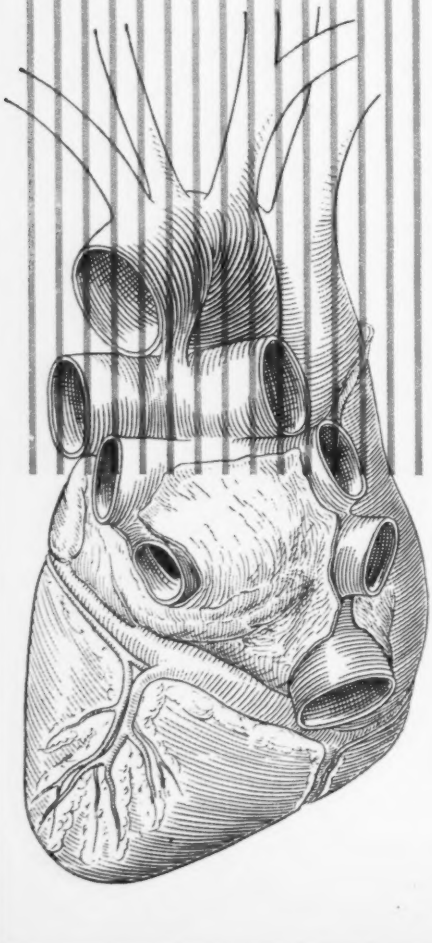
The question of bed rest versus chair rest is not settled. In the severe attacks, it appears wise to keep the patient at complete bed rest for two to three weeks, certainly until all signs of shock and acute chest pain have subsided. Later, gradual increase in activity is allowed. The question of total caloric and fat content of the diet — in particular cholesterol — has not been answered. However, it would seem wise for the obese to reduce and for the normal to avoid obesity.

The use of oxygen, opiates, and the treatment of congestive failure with the digitalis preparations, diuretics and salt restriction are phases of therapy which are only mentioned, since knowledge of their use is so general. Vasopressor substances can be life saving at times in states of severe shock. The avoidance of mental and physical stress and strain should be emphasized.

SUMMARY

A clinical review of coronary aterial disease is presented. Significant points in the differential diagnosis of angina pectoris, acute coronary insufficiency, and acute coronary thrombosis with myocardial infarction are emphasized. The clinical course, complications, prognosis and treatment are discussed on a comparative basis for each condition.◀

15. Wright, I. S., et al., *Am. Heart J.*, 36:801,1948.
16. Russek, H. I., et al., *J.A.M.A.*, 145:390-392, 1951.



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for total management
of angina pectoris

Marplan prevents pain: Marplan is indicated primarily for patients with moderately severe intractable angina pectoris. It has demonstrated high degree of effectiveness. When used on a continuous dosage schedule, Marplan prevents pain, increases exercise tolerance and reduces nitroglycerin requirements.[1-3] To date, Marplan prophylaxis has been evaluated in over 300 angina patients. The response rate was 76 percent with improvement ranging from a reduction in the number of attacks to virtual abolition of the anginal state.[1] One study reported "excellent effects with relatively small doses" and "greater relief than [with] any other compound in our experience."[3]

Marplan creates a more confident mental climate: Many angina patients display a more cheerful outlook when on Marplan therapy. This mental improvement is undoubtedly due to the antidepressive action of Marplan. However, it should be stressed that Marplan is indicated for *symptomatic* control of angina pectoris and while it frequently abolishes anginal pain. Marplan does not appear to influence the EKG. Hence, as with previously available prophylactic agents, it is imperative that patients be instructed to maintain the same restriction of activity in force prior to Marplan therapy.

ORIGINAL ARTICLE

Care of the Discharged Mental Patient

Psychochemicals may help to maintain former hospitalized mental patients, but cannot eliminate underlying pressures

ELSE B. KRIS, M.D.,* *New York, New York*

During the past 50 years many therapeutic approaches in the field of psychiatry have been advocated sporadically.

POST-HOSPITAL CARE OF THE MENTAL PATIENT A RECENT DEVELOPMENT

Recently the psychiatric profession has become aware of the vast psychosociological responses evoked by new therapeutic measures which are only now beginning to receive proper attention. This all started when new tranquilizing drugs were found to be effective in treating psychotics, returning great numbers of these patients from our mental hospitals to their home communities.

*New York Department of Mental Hygiene, Aftercare Clinic, New York 11.

NEW DRUGS GREATLY INCREASE NUMBER OF DISCHARGES

The use of these new drugs has resulted, not only in a significant increase of discharges, but in a tremendous lessening of disturbed behavior in all psychiatric hospital wards where the drugs are used. For the past few years there was no reduction in the number of admissions and the types of patients admitted remained pretty much the same. The only notable change was that during 1955-56, 30,000 patients received drug therapy in New York State alone, an increase large enough to produce a material effect on the number of releases if the treatment proved effective.

The highest discharge rate from mental hospitals was of patients who received the most intensive drug therapy, with the greatest rise in rate of discharge being among patients with a long hospital residence. During the past four years the state hospital population in New York decreased by 3 to 4,000 patients, instead of increasing by 8,000 patients as would have been expected from experience of previous years.

Why this result from this form of therapy? For the first time an agent was available which could maintain patients on a level of satisfactory mental functioning for a prolonged period of time and which can be used outside the hospital. Heretofore, complicated forms of therapy (*e.g.* electric shock), were necessary in order to maintain a certain level of mental functioning. Now for the first time we are able to achieve optimal psychological, social and vocational capacities in the community for our patients by chemical means.

RETURN RATE REDUCED BY HALF OR MORE

Another factor of importance is the *return* rate of patients released from such hospitals. Before the advent of modern drugs it was 33 to 35%, it is now down 10 to 20%.

WHAT FAMILY DOCTORS DESIRE TO KNOW

The family physician dealing with such patients generally asks:

1. Which patients require maintenance therapy?

Most all who have had extensive hospitalization, or several hospital admissions, must be kept on maintenance therapy. Some cases of a more acute nature require maintenance therapy if the stress situations in the environment are considerable. The excitement of coming home and adjusting to the outside world is better tolerated if maintenance therapy is given for at least the first few weeks.

2. How long should therapy be continued?

Chronic cases seem to require infinite continuation. If started only to bridge the period of readjustment, it can be safely discontinued when the patient is comfortably in a new routine of life. For a patient who begins employment and the tension interferes with his sleep, therapy over the first few weeks has proved to be helpful.

3. How high should maintenance dosages be?

Obtain information on this point from the hospital physician in whose charge the patient has been. Most patients released are given such information to be passed on to family doctors, and not infrequently one of these writes for such information prior to the patient's release. An average daily dose of 50 to 150 mg. of Thorazine, or 25 to 75 mg. of Compazine, or of 50 to 75 mg. of Vesprin, suffices in the great majority. A daily dose of 800 to 1200 mg. of Miltown has been found to serve the purpose in certain cases. Return of symptoms requires dosage increases for several weeks, until symptoms are relieved. A single daily dose at bedtime usually maintains improvement without causing drowsiness interfering with work. These patients must be seen regularly to vary the dosage according to needs, and to determine whether the drug is being taken.

4. What is the incidence of complications?

There are far less untoward side effects caused by any of the phen-

othiazine derivatives given for a long ime than might have been anticipated. The only side effects observed on large number of patients kept on aintenance therapy over a period f years were mild skin rashes, constipation, and occasionally, drowsiess.

Many physicians consider pregancy and childbirth to be immediate recipitants of schizophrenic reactions. Persons with a history of earlier motional and personality disorders re liable to become overtly psychotic n reaction to the stress of pregnancy nd childbirth. Twenty-four women who had been hospitalized two to 10 ears, after returning to the community, went through pregnancy, hildbirth, and the post-partum period on maintenance therapy with one f the phenothiazine derivatives. Relapse of the mothers into a psychotic ondition was prevented, and to date these women continue to function successfullly in the community nd are able to take care of their nfants. These infants have shown no ll effects, and are developing normally. The oldest is now 2½ years old. n this group were only two women who had refused to continue with rug therapy. These relapsed at the nd of their pregnancy, and had to e returned to the hospital.

OT ALL PATIENTS TAKE THEIR MEDICINE

The greatest problem encountered n this form of therapy lies in reuctance to continue with drug therpy. To prevent or overcome this, etter indoctrination of families, as well as of the patients themselves, is ecessary.

SYCHOLOGICAL AND SOCIAL ASPECTS

Aside from these factors, we have to onsider what returning our patients to the community means psychologically and socially. Some families show great anxiety about accepting relatives back into their circles, sometimes after years spent in a mental hospital. Institutional life does affect habits and modes of life in a way difficult to be tolerated by those outside. The family physician must discuss problems with all members of the family and the patient, and play a big part in solving existing problems and preventing development of others.

LACK OF UNDERSTANDING BY THE FAMILY

Some families wonder why a patient returned home cannot start working immediately. Although they are willing to admit that after any physical illness some time is required for recuperation and readjustment, they are unwilling to allow the same thing after mental illness. Others are over-protective, interfering with the patient's attempts to do things on his own; to work, to start any kind of social life, frequently being afraid of what neighbors might think or say.

REEMPLOYMENT—MEANS, DIFFICULTIES AND SUCCESSES

A greater number of mental patients have found gainful employment on their own initiative than had been anticipated. While presently a number of patients are unemployed, only about 10% are considered unemployable. Several of the men and women returned to their former jobs. Others found employment through private or public employment agencies, others through a member of the family, or through the newspapers. While the employer's of those patients who returned to their former jobs

ew about their employee's former
lness, most of the other patients
ithheld this information after having
one to three occasions told the
uth and not been employed. There-
ter, these patients stated that they
d been physically ill for some time,
gave some other reason for their
cent period of unemployment.

Of a group of 350 patients under
servation for the past three years,
% of the men and women gainfully
nployed require maintenance ther-
y. In none of the cases does this
terfere with their work capacity or
ork performance, nor was there any
cident proneness observed. When,
nder too much pressure on the job,
mptoms returned, they disappear-
d as soon as pressure eased off. Sev-
al patients were able to learn new
ills and to go through some type
formal education, *e.g.*, working to-
ard a high school diploma. Pharma-
therapy did not interfere with these
ndertakings. In the majority of
ses a single dose of the tranquiliz-
ing drugs given at bedtime was all
they needed.

CONCLUSION

These new compounds are of greater value in helping to maintain former hospitalized mental patients in the community. No drug, however, can change the social and economic pressures which prove to be the underlying cause of many of the relapses encountered. They can help insulate the patient from the stresses caused by ignorance and prejudice, but the stresses are still there, and every attempt possible should be made to gain better knowledge about their nature and to find means of relief or at least alleviation. These patients must have proper medical supervision of the drug therapy as such, as well as for some form of supportive therapy, i.e., providing them with a willing ear to listen to their problems and readiness to help them through all their difficulties.◀

reatment of Common Infections ith Erythromycin Proprionate

Of 105 patients treated, good results were obtained in 98 (94 per ent). The drug was particularly effective in 64 cases of staphylococcal fection, including one acute and six hronic cases of osteomyelitis. Of the atients with osteomyelitis, one required surgical drainage as well as ntibiotic therapy and one, four onths after therapy, experienced relapse.

Of the remaining patients, 16 represented cases of hemolytic streptococci and the rest those caused by a variety of organisms, including pneumococci. Dosage for most patients was one or two 250 mg. erythromycin proprionate (Ilosone) capsules four times daily. Average duration of treatment was 12 days, the range being one to 55 days. Side effects, occurring in eight patients, included anorexia, diarrhea, nausea, and vomiting, and were severe enough in three to require discontinuance of the drug. Superinfections were not observed.

Smith, I. M., & Soderstrom, W. H., *J.A.M.A.*, 170: 184-188,1959.

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Esidrix, through its unique effect on body salts,* provides a physiologic environment in which antihypertensive drugs work best. Thus Esidrix, when added to any treatment program:

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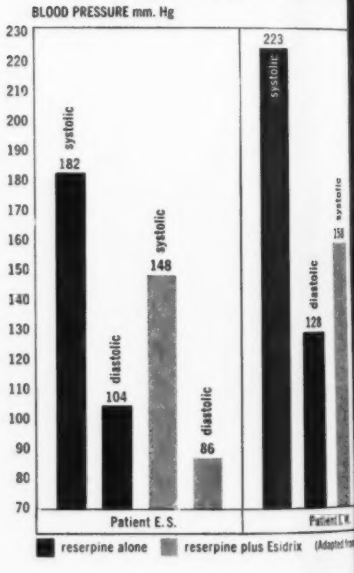

*Esidrix is at least 10 times more active than chlorothiazide and gr increases sodium and chloride excretion; however, it has no more effe potassium excretion than does chlorothiazide.

ORIGINAL ARTICLE

Gastric Ulcer and Gastric Cancer

Some suggestions are given for the differential diagnosis of gastric cancer and ulcer

MARTIN L. TRACEY, M.D., *Boston, Massachusetts*

Many doctors think that all gastric ulcers should be operated upon in order to remove potential cancers of the stomach while they are still early lesions. Not all sores on the skin are removed, however, until they are treated medically. The difficulty is in getting a good look at the gastric ulcer which has probably no greater tendency to malignancy than the average sore on the skin.

BENIGN OR MALIGNANT? NO EASY DECISION

All the available diagnostic tools are required to properly place these lesions in a category of benignity or malignancy. Usually the general practitioner or the internist is consulted first, and on them falls primary responsibility for guiding the patient. Epigastric distress or discomfort in the patient over 40, and at any age when it resists simple measures for more than two or three weeks, should be carefully investigated. Periodic rather than food or alkali relief is the characteristic feature of the ulcerating lesion of the upper digestive tract. Nature makes some attempt at covering or healing these lesions and periodically the patient feels better. Reports of food relief and alkali relief are favorable, whereas fullness usually suggests malignancy or complication added to the formerly benign ulcer. Pain in gastric ulcer is usually high; maybe an inch

or two below the xiphoid process, sometimes in the lower substernal area. It may be diffuse in the entire epigastrium, occasionally in the left upper quadrant of the abdomen. Location, rhythmicity, or periodicity do not help to localize the ulcer. Only X-ray and gastroscopy can locate these lesions properly.

COMPLICATING ILLNESSES

Other concurrent illnesses such as gallbladder disease, or functional disturbances may confuse and alter the picture and its response to treatment. A most rigid inspection of all the tests done when a gastric ulcer is suspected should be the rule. Filling the stomach with barium is outmoded. A rugal pattern study should be part of every upper gastrointestinal examination, with compression air films of the suspicious areas and routine air films of the antrum and the duodenal area. Even after the stomach has been filled with barium, at times it is possible to see retraction deformities or odd areas that can be re-inspected by placing the patient for fluoroscopic examination in certain positions that allow air to displace the barium, and a rugal pattern to be outlined with compression technique. The most difficult area in the stomach to examine, once the full glass of barium has been given, is the body and sometimes the fundus of the stomach. A fizzing substance such as tricalsate, swallowed in a small amount while still fizzing, will create an air bubble and may make it easier to get a contrast picture of the area suspected. Most important for x-ray localization is repeated examination once a suspicious area or an ulcerating lesion is noted.

REPEATED EXAMINATIONS

Further films with a small amount of barium and compression technique will outline the area in the base of the gastric lesion. There is a distinctly better opportunity of judging whether an ulcer is an ulcerating tumor or an ulcerating process in the lining of the stomach after the second examination. Words important in this connection are: *extrusive* or *exclusive* characterizing the benign ulcerating lesion; *intrusive* or *inclusive* characterizing the malignant lesion. If one could draw lines along the curvatures of the stomach and the anterior and posterior wall, the benign ulcer would project from the body of the stomach. The malignant ulcerating lesion might project beyond the confines of the stomach, but most of the ulcerating lesion, the tumor itself, would be within the confines or the boundaries of the stomach.

BIGNESS DOES NOT SUGGEST MALIGNITY

Years ago, size was mentioned as an important factor in the diagnosis of gastric ulcer,[1] the larger lesion being suspected of malignancy. This is now denied. Most large ulcers are perforated benign lesions that are almost impossible to heal medically because of size and penetration into the liver, pancreas or lesser omental sac.

FALLACIES AS TO PRE-PYLORIC ULCER

The pre-pyloric ulcer gained a reputation for malignancy. Gastric cancer is more common in the antrum, and an ulcerating cancer cannot be classed with the pre-pyloric lesion that is strictly ulcerating in nature without tumor formation. Differentiation between the two is at times difficult, but with the use of certain procedures, error can be kept at a minimum. Pathologically speaking,

1. Heffernon, E. W., & Tracey, M., *New England J. Med.*, 241:604-606,1949.

ulcers in the pre-pyloric and antral areas are no more commonly malignant than ulcers in any other area of the stomach.[2]

WHAT THIS ULCER SUGGESTS

Pre-pyloric spasm should be studied as a clue that there is either a small ulcer in the pre-pyloric area, distal to it, or sometimes remote in the upper portion in the body of the stomach. Such a finding makes it necessary for the examining physician to study radiologically the entire stomach and upper duodenal area, because the spasm may be reflex from an ulcer that is somewhat distant from the spastic area. Sometimes it is necessary to empty the stomach of secretions and re-examine the patient. If this is not done soon after the original examination, a small gastric ulcer may heal and the primary nature of the problem may never be discovered. Early examination in the patient who is bleeding only moderately is necessary to detect small gastric ulcers, and careful inspection of the body of the stomach for a tiny extrusive ulcerating defect is mandatory. These have been overlooked on many occasions. The stress ulcer, occurring immediately after surgery may be very small and yet bleed rather briskly.

THE GASTROSCOPE IS USED SOON AFTER BLEEDING

Some physicians do not hesitate to make gastroscopic examinations immediately after bleeding. This takes great courage but may be safely done by the experienced endoscopist. At times, in the absence of positive findings, gastroscopy and the string test may localize a lesion and make repeat examination or re-inspection of x-ray pictures more revealing. Recently a small gastric ulcer was detected three-eighths of an inch above the stoma on the lesser curvature in a patient who had a subtotal gastrectomy from a bleeding duodenal ulcer seven months previous to this episode. Many leading gastroenterologists were asked about the association of gastric cancer and duodenal ulcer, but only a few have seen more than one or two such cases. The association of a duodenal ulcer with a gastric ulcer is suggestive of benignity.

Greater curvature ulcers are being increasingly reported as benign in nature after long follow-up. Many of these are anterior or posterior wall, rather than greater curvature, and are better localized by gastroscopic examination than by x-ray examination.

An inexperienced person may mistake a gastric diverticulum for an ulcer. These are usually near the cardiac end of the stomach and are constant in appearance. Rarely they are in the pre-pyloric area and can cause obstruction from filling up with gastric secretions and food material.

THE DIAGNOSIS MADE, WHAT NEXT?

The physician must use all that is at his command to heal the gastric ulcer quickly and keep it healed. All gastric ulcer patients should be hospitalized, and on strict bed-rest, with hourly neutralization. Gastric analysis should demonstrate free acid, although a few have been reported with histamine achlorhydrias. Intravenous reserpine[3] may stimulate acid secretions in some of these patients suspected of achlorhydria in the future. The stools should be examined for occult blood. The pain should be

2. Meissner, W., Personal Communication.

3. Schneider, D. M., & Clark, M. L., *Ann. Int. Med.*, 47:640-651,1957.

completely controlled. The lesion should disappear to gastroscopic examination, as well as to x-ray examination repeated weekly. Six weeks should be the outer limit for healing on the gastric ulcer regimen. There should be complete flexibility of the wall on inspection by gastroscope and x-ray after the ulcer has healed. Two new methods remain to be evaluated and positive findings with either one are important; negative findings may mean little. The Ayre brush and saline washing of the stomach lining, examined as a Papanicolaou smear if positive, usually means that there are some malignant cells in the lesion.

DISCUSSION

Following the above programs will weed out most any superficial malignancies,[4] and the percentage of error is certainly not greater than the percentage of disability even after the most modern sub-total or partial gastrectomy.

It is unfair to consider all lesions that are turned over for resection as being possibly benign in the beginning, and classed as a statistical entity when speaking of gastric ulcers. The behavior of these lesions, the resistance to therapy, appearance by x-ray, or the clinical course demanding that they be turned over for surgical resection places them in the class of suspicion. If a certain percentage of these proves to be malignant they should be classed more as a gastric cancer than as a gastric ulcer to begin with. Again, if every gastric cancer is to be subjected to gastroscopy, biopsy, stomach washing, the percentage of "gastric ulcer" that is found to be malignant would be much higher. Many of these lesions are originally considered malignant or suspicious on the x-ray examination alone, and cannot fairly be so classed. The gastroscope is an instrument to be used for questioned areas that are not quite clear with other methods of inspection, the diagnosis of undisclosed bleeding, upper abdominal symptoms which are not explainable by other means, and a guide to the healing of the gastric ulcer.

A gastric ulcer, particularly in the young, should be handled by the most expert means, because the sacrifice of a large portion of the stomach for a benign lesion in a young person with the risk of a mechanical disturbance post-operatively, demands every medical method of observation and treatment worth noting.

ROUTINE GASTRIC X-RAY

With all the furor about atomic radiation and exposure today, it is necessary to deliberate about routine gastric x-ray as a valuable adjunct to the annual physical examination.[5] At the hands of careful examiners who use minimum fluoroscopy, whose experience is sufficient to do the examination quickly without much exposure, this examination is a very reassuring addition to the annual physical examination of the person over 40. Periodic x-ray examination is the best road we now have to cancer curability. Mass methods of screening are futile and not valuable. These examinations must be done by experienced personnel in order to make tumor detection and tumor curability in a very commonly affected area possible. The statistics of curability are disheartening and the risk of radiation exposure is far less than the risk of development of gastric cancer.◀

4. Dworken, H. J., et al., *Ann. Int. Med.*, 47:711-721,1957.

5. Rigler, L., *J.A.M.A.*, 163:530-536,1957.

ORIGINAL ARTICLE

The General Practitioner Should Manage Varicose Veins

After familiarizing himself with the necessary procedures any physician will be able to treat varicose veins successfully

H. O. McPHEETERS, M.D., *Minneapolis, Minnesota*

Varicose veins result from a progressive, degenerative condition of the vein walls. Any vein in the body may be involved. Only small (½ cm.) veins are amenable to the injection treatment. All perforators must be dissected and ligated.

The vein distribution is well studied with the patient standing on a stool. The point of injection is selected and marked lengthwise of the loop. The patient then lies down with the foot resting on a stool. A 2 cc. syringe containing the solution is fitted with a 1½ inch sharp, short-bevel, 23-gauge needle, which is inserted into the vein. While holding the foot and leg elevated to drain all the varicosed segments, the tourniquet is applied 8 to 10 inches above the segment being injected. The foot is lowered to a foot-rest below the level of the body and the solution is injected. With care this is done readily without getting the needle point out of the vein. After the injection the needle is shoved through the vein thus transfixing it.

All injections are made as quickly as possible and then the patient is allowed to sit up and rest for three minutes. The needles are then withdrawn and pads of cotton or gauze strapped over the site of the injection

and an Ace bandage is applied.

The patient then must walk four to six blocks immediately and continue much walking that day. This will wash out the solution that may have spilled over into the deep veins. A firmer and smaller thrombus will form if the bandage is worn very tight for several days.

The solution I prefer is Sylnasol. An emulsion is made by repeatedly withdrawing the solution from the vial and forcing it back in under pressure making a fine foam. After seven to ten days as much of the fine thrombus should be evacuated as possible, using a No. 11 blade and digital pressure. No anesthetic is needed.

Large varicose veins are treated surgically. Reverse flow is easily demonstrated by the Trendelenburg test, the multiple tourniquet test, the milking test, blood pressure readings in the veins, and by palpation. I use spinal anesthesia, carefully given with a 22-gauge needle.

Locate the foramen at the groin, mark the course of the saphenous through the thigh and all the varicosed segments. Search carefully for perforators, using a firm digital pressure along the veins. The patient will wince with pain each time as you come back and press in at that point. At surgery, follow these pre-operative markings carefully. Perforators missed above and just below the ankle may be the cause of an ulcer not healing or a dermatitis not responding to treatment.

Any surgery is but "puttering" that does not include a high saphenofemoral ligation flush with the femoral vein, followed with a thorough dissection and ligation of all the perforators sub-fascially and a suturing of the hole of emergence. Then all the varicose segments must be dissected and stripped out. I prefer the pliable Linton stripper in a set of three. The vein can be stripped either up or down. When the traction on the stripper shows a pulling in of the fat as the stripper head passes along, it means there is a large branch there. It should be cut down and later dissected out. Incisions, adequate in size and number must be made to do this. At times this is best done with many small 1-inch incisions; at other times, long incisions with almost a block dissection must be used. I seldom use the radical Linton and Felder dissection, but the incisions must be adequate and the work must be thorough.

A plexus of veins is often found below the popliteal space, from the short saphenous, extending into the muscle of the calf. This should be dissected out. At times the main popliteal vein is found to be widely dilated and sacculated, in that case, it remains filled with stagnant blood whenever the patient is standing. The blood pressure in the popliteal vein in such a case we would expect to be 80 to 100 mm. High back pressure on the valves in the communicating veins blows them open and we often find new perforator veins and new varicose vein formations developing after surgery.

The fact that I have had no emboli in over 9,000 ligations done in the past 15 years proves that patients should have early and rapid ambulation. Elastic bandages (4-inch Ace) must be worn as long as there is any swelling. Beginning two months postoperatively, all remaining varicosed segments must be injected at one-week to three-week intervals and the

with a one week course of daily injections

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patient must be seen at yearly intervals thereafter. The complications of varicose veins—phlebitis, dermatitis, ulcers, etc.—deserve a special presentation.

APPLYING HOT PACKS

The patient must be in bed, lying flat, only one pillow under head. Knee should be flexed slightly with the lower leg high on pillows 16 inches above level of mattress. Packs should be applied at least 10 inches both above and below the area to be treated. Temperature of packs should be 120° to begin with and then increased as tolerated. Preferably to 130° if the patient should not object. Fresh packs should be applied as quickly as possible at time of change to prevent the cooling of the skin.

Fold a blanket four times and place on top of a pile of pillows.

Half-fill several hot-water bottles with water at right temperature; compress the air out of bottles as cork is tightened.

Wring large bath towels and woolen blankets out of hot water. Quickly apply the wet towels, then the hot water bottles and then quickly wrap the blanket about it all and pin tightly.

The pack, properly applied, will stay hot for at least two hours, and it should all be changed at such intervals.

Best results will be obtained if the packs are continued for not less than four hours at a time.—two 2-hour applications.

When the Ace bandage is applied it is best if the patient walks a great deal.

Care and treatment of varicose veins rightfully belongs in the hands of the general practitioner. He should acquaint himself with all the tests used in study of the case at hand and then qualify himself to do the best job of surgery possible in treating the condition. New varices will form as time goes by and pregnancies intervene. They should be analyzed and treated with the same thoroughness as was the original case. All patients should be re-examined yearly.◀

Minnesota Med., 42:215-217,1959.

Radical Treatment for Mixed Tumor of Lacrimal Gland

These tumors are similarly histologically to mixed cell tumors arising in the salivary glands, but have a poorer prognosis. Reports show fatal recurrence in almost 100% of patients treated by local excision. Presenting symptoms usually are exophthalmos, ptosis and swelling of the eyelids. In a patient with these complaints, a smooth firm mass was palpated in the superior, lateral portion of the orbit. Exploratory operation revealed an encapsulated tumor mass, which was removed. Diagnosis was confirmed by pathologic examination. Because of the high incidence of recurrence after local excision, the patient agreed to exenteration of the orbit. A skin graft was not used, and within a few months epithelium had completely covered the bony orbit. There was no evidence of recurrence after 7 months.

Costner, A. N., *J. Tennessee M.A.*, 51:373-374,1958.

Diverticulosis and Diverticulitis of the Colon

Treatment of this condition should be simple, adequate to the remission of symptoms, and regulated by the patient's response

CHARLES W. MAYO, M.D., and P. KENT CULLEN, JR., M.D.,
Rochester, Minnesota

Uncomplicated diverticulosis of the colon probably gives rise to no symptoms or signs detectable on physical examination. Yet colonic diverticula should not be regarded with indifference. No diverticulum, no diverticulitis. The size and number of diverticula are likely to increase with age. The existence of diverticulosis does not imply that diverticulitis will develop. A diet low in cellulose, large seeds, nuts, and other coarse foods should be adhered to. Regulation of bowel habit should be by modifications of diet plus the use of mild laxatives, if necessary, such as mineral oil, milk of magnesia, or a combination of equal parts of each, one to two ounces at bedtime. The use of enemas is to be condemned for they may cause perforation of diverticula. Obese patients should be encouraged to lose weight. Patients complaining of vague abdominal symptoms frequently are found to have diverticula, but the symptoms should not be ascribed to the diverticula.

At the first warning of the onset of diverticulitis, the patient with diverticulosis should be told to stay in bed and take a liquid diet and report to his family physician. When acute diverticulitis is probable, the patient should not be subjected to a lot of diagnostic procedures, how-

ever, if he does not respond to medical management, or cancer is suspected, these procedures become necessary. The possibility of aggravation of the process or perforation, or of both, is ever present when the patient is subjected to proctosigmoidoscopy and retrograde barium examination. Acute attacks, uncomplicated, last a few days to two or three weeks. Surgical intervention is for complicated cases.

The medical management of diverticulitis employed at the Mayo Clinic consists of:

1. A liquid diet—liquids orally, intravenously, or in both ways; as symptoms subside, diet is increased in quantity and variety.

2. Rest in bed, absolute or with bathroom privileges only.

3. Heat to the lower abdomen via hot-water bottle, heating pad, or a moist head apparatus.

4. Analgesics for rest and relief of pain.

5. Penicillin (200,000 to 600,000 units IM q. 6 h.) and streptomycin (250 to 500 mg., IM q. 12 h.) in combination, are the antibiotics of choice. Patients allergic to either or both are given, orally or intravenously, chlortetracycline (250 mg. q. 6 h.) or oxytetracycline (250 mg. q. 6 h.)

6. General measures: tincture of belladonna, starting with eight drops in ¼ glass of water, q. 4 to 6 h., until there is slight dryness of the mouth. In case of vomiting, atropine sulfate (1/100 gr.) can be used to replace the belladonna. Retention enemas of warm water or cottonseed oil may be given daily.

7. The diet and the general activity are advanced as the symptoms regress and the patient tolerance increases.

COMPLICATIONS

During the acute episode the physician should remain alert for complications. In a review of 202 cases in which these occurred, the sequence was obstruction, abscess, and vesicosigmoidal fistula. Obstruction usually results from edema in a lumen fibrosed from repeated acute attacks, but may ensue on the first attack. At the first indication, a liquid diet or parenteral feeding, together with long-tube suction and antibiotics, may relieve; if not, surgical decompression usually is necessary.

Recognition of abscess is extremely difficult. With the use of antibiotics and intensive medical care, many patients recover.

Sigmoidovesical fistula may be shown by feces in the urine and pneumaturia.

MANAGEMENT AFTER ACUTE ATTACK

Diverticulitis is a disease of exacerbations and remissions. Emphasis is placed on what to do at the first warning of another attack. Frequently threat of a recurrent attack can be turned aside or its severity lessened by the immediate institution of bed rest, liquid diet, and antibiotic therapy, hospitalization not being necessary. For the minority of cases requiring surgical operation, only recently has the multiple-stage operation given way to a one-stage procedure. This under proper circumstances has been attended by low mortality and low incidence of postoperative complications. In recent years resection in the quiescent stage has gained favor. Sound judgment in the selection of the procedure of choice for the patient with diverticulitis is essential.◀

New York J. Med., 59:2391-2396,1959.

A Systemically Effective, Oral Anti-Fungal Agent

Clinical trials indicate that griseofulvin is systemically effective against certain fungus infections

HERMAN GOODMAN, M.D., *New York, New York*

Mycotic infections of the skin, nails and hair are usually chronic, resistant to conventional therapy and virtually impossible to cure without inflicting local truama. Despite careful control, roentgen techniques employed in ringworm of the scalp often lead to permanent bizarre baldness. Topical agents have proved disappointing for the most part because they are unable to penetrate the keratinous layers of the skin, hair or nails to reach the site of the offending organism.

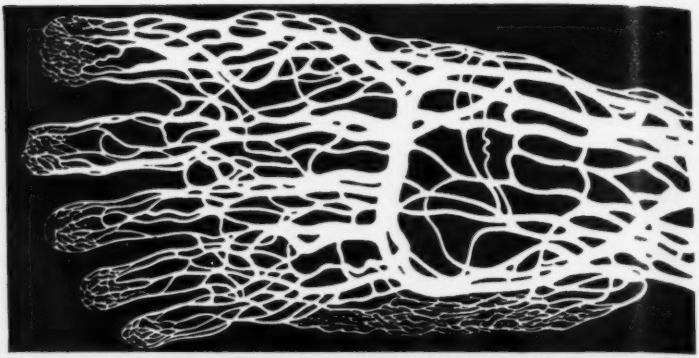
NEED FOR A SYSTEMICALLY EFFECTIVE AGENT

The dermatologic armamentarium has long required a safe, systemically effective agent capable of initiating fungal resistance in all infected keratin layers of the body. Such an agent would be especially welcome in areas such as Morocco, where virtually every other child is afflicted with ringworm of the scalp, and where only about .01 per cent weekly can benefit from roentgen therapy.

With the development of griseofulvin, the first step appears to have been taken toward realization of an agent of this type.

PROPERTIES OF GRISEOFULVIN

Griseofulvin is a fermentation product of three species of Penicillin: P. patulum, P. griseofulvin and P. janczewski. It is colorless, neutral, ther-



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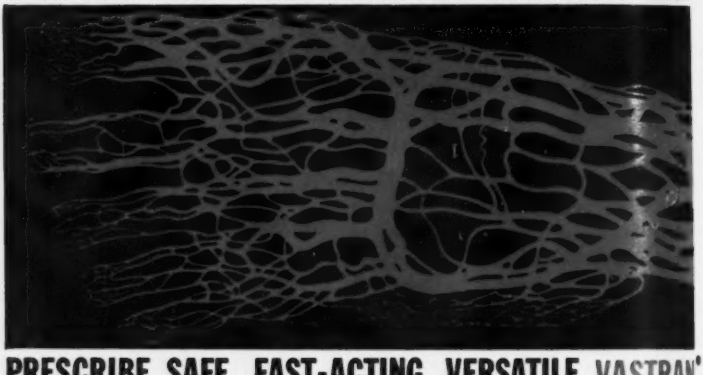

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nostable and only very slightly soluble in water. In animals it has been found to be notably active against pathogenic skin fungi and to have very low toxicity when administered orally. Guinea pigs experimentally infected with Microsporum canis and Trichophyton mentagrophytes responded quickly to small doses (60 mg/kg. daily), while calves infected with T. verrucosum also showed a favorable response to the drug. Radiochemical studies showed that griseofulvin is readily absorbed and excreted rapidly.

CLINICAL TRIALS

In nine patients with T. rubrum infection of the skin receiving an arbitrary dosage of 250 mg. four times daily without supplementary local treatment, rapid relief of itching was followed in two to three weeks by reformation of normal nail growth and diminution of hyperkeratosis of the palms. The fungus became increasingly difficult to find in scrapings as treatment progressed. Sweating of the palms recurred in three of these patients after having been absent for years.

In one child with M. audouinii infection of the scalp and face, the facial lesions cleared within two weeks and the scalp lesions within three weeks after institution of treatment with griseofulvin. Wood's light and microscopic examination revealed no evidence of fungus after three weeks.

Ringworm of the body and scalp in 31 patients receiving the drug cleared within one to two weeks, and onychomycosis within three to four months. In some of these patients infections of up to 60 years' duration responded.

Results of treatment with the drug in 32 patients indicate that:

1. Griseofulvin is effective against Trichophyton and Microsporum but not Monilia and Blastomyces.

2. Tinea corporis is usually healed within 2 weeks, ringworm of the toe spaces in three to four weeks, scalp ringworm in four to six weeks and ringworm of the nails in three months.

3. Cultures of superficial skin layers of susceptible organisms become negative after one week of treatment.

4. The average dosage of griseofulvin is one to two grams daily.

5. The drug has a high index of safety within the prescribed dosage.

MECHANISM OF ACTION

It is generally agreed that griseofulvin is mycostatic rather than fungicidal. Although the precise mechanism of action is not clear, the effectiveness of the drug is considered due to its keratin-permeating activity. The changes of relapse or recurrence of infection after discontinuance have not been determined.

SIDE EFFECTS

Adverse side effects appear to be minimal in man. To the present time reported untoward reactions have been indigestion in one patient and increased thirst in two patients. The drug has caused blood dyscrasias in animals, suggesting that regular blood studies be taken if it is to be employed clinically for prolonged periods of time.◀

Am. Prof. Pharm., 25:235-237,1959.

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RUBRAMIN PC is highly effective whenever high doses of vitamin B_{12} are required.

ie Detection

When interpreted by a qualified operator, the polygraph may be a reliable aid to the criminologist

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Editorial, Physician's Bulletin (Lilly)

Physicians who read that "the sub-ct submitted to a lie detector test" ien wonder how reliable is the ap-ratus devised to differentiate spok- truth from spoken untruth. Mod-n methods of lie detection are based, eoretically, on physiologic princi-es which underlie physical pheno-ena that result from emotional re-ctions. One of the most common ex-mples of this concept is the response blushing to embarrassing situa-ns. Such reactions are mediated rough the autonomic nervous sys-m and are uncontrollable.

N ANCIENT IDEA

The establishment of guilt or inno-nce on psychophysiologic principles was practiced centuries ago. In China, an accused person was commanded to chew rice and then spit it out. If the expectorated rice was dry, he was adjudged guilty; if moist, not guilty. This procedure might have a valid psychophysiologic basis in that salivary secretion could be slowed or even arrested as a result of fear (it being assumed that only the guilty would feel fear).

On the assumption that the telling of a lie will result in various uncontrollable, but measurable, physical changes, the so-called lie detector has come into wide use in the field of criminal investigation. The apparatus, known as the polygraph, is designed to measure graphically a multiplicity

of physical phenomena, such as blood pressure, respiration, pulse rate, electrodermal change, etc.

THE POLYGRAPH

Variations in pulse rate were used in an attempt to detect deception as early as 1895. Later, blood pressure variation and changes in the excursion and rate of respiration were used as a similar index. It was not until 1921 that an instrument capable of continuously recording all three phenomena — blood pressure, pulse, and respiration — simultaneously throughout the period of the test was devised.

The original polygraph has undergone many refinements, and by use of the instrument a large variety of autonomic functions can be measured over long periods of time without discomfort to the subject. The blood-pressure cuff is not used; arterial pressure is measured by a delicate light-weight strain gauge placed over a convenient artery. The refined modern polygraph, though, has been designed primarily for research in general medical fields rather than for the evaluation of emotional responses associated with lying. Relatively unrefined apparatuses with conventional arm cuff and expansible chest band are often used today for lie detection by measurement of changes in blood pressure and respiration only.

TESTING OF A LARGE NUMBER OVER MANY MONTHS—STARTLING RESULTS

Over a period of three years, 2,000 bank employees in 52 Chicago banks were subjected to lie detector tests in an attempt to expose the embezzlers of various sums of money. From 10 to 25 per cent of the total personnel of many banks were found to be lying, and practically all of these positive lie tests were later substantiated by confessions. In one instance, the lie detector was used on 56 employees to detect the embezzler involved in a single theft. Instead of finding one liar in the group, 12 were discovered, nine of whom confessed to embezzlements hitherto unknown to the bank officials.

At first glance, this is an astonishingly accurate detecting by the machine, but more thorough consideration poses many questions. Were the other three who showed positive tests guilty or not of other unknown irregularities? Furthermore, to evaluate the accuracy of polygraph, it would be necessary to know whether or not all the remaining 44 subjects who gave a negative test were innocent of any such crimes.

ANOTHER INVESTIGATION

A survey involving 1,551 subjects tested in the investigation of 905 criminal acts during an 8-year period showed that, of those on whom an analysis could be made, 563 *in the judgment of the operator*, had guilty knowledge of the crime. Of this group, 308 admitted guilt following the test. One may wonder about the remaining 255. There were 803 who were cleared by the polygraph. One may also wonder about them. Were they guilty or innocent? In short, is the problem one of "false negatives" and "false positives"?

ENTRAPMENT—PERHAPS ILLEGAL AND IMMORAL ENTRAPMENT

Many a suspect admits guilt during the preliminary questioning when he concludes that he is helpless in trying to conceal truth in the face of a "fool-proof" instrument. The impression of infallibility may be created. The subject is shown several playing

cards face down, asked to select one, identify it, and replace it with the others. He is then informed that he will be asked questions to all which he should reply "no" even when the truth would be "yes." When he answers "no" to the question about the card he has identified, he will be lying, and some, but not all, subjects will reveal this by polygraphic changes. Even though the subject is not informed of the result of this preliminary test, he often assumes he has been detected in the experimental lie and, if guilty, may confess forthwith.

Although the polygraph may show a significant change when "no" is answered to the key question in the experimental test run, the subject may not react identically when put to the real test. Just which persons will do so is not predictable.

NEED FOR MORE AND BETTER STUDY

There is need for further study of such reactions in normal and abnormal people. Many of the problems involved in lie detection are related to the psychiatric status of the person. Psychologists and police investigators rather than psychiatrists have been active in this field.

CERTAIN TYPES IMMUNE TO SUCH TESTING

A penologist, has described three types of persons who are immune to the polygraph:

1. The asocial, childish personality who feels no guilt about lying.

2. Habitual criminals to whom "a lie . . . is preferable to any silly concept of truth."

3. Pathologic liars who cannot distinguish between reality and fiction.

Contrary to popular belief, a lie detector does not ring a bell or flash a light when the subject tells a lie or the truth. The operator himself must make this distinction, and he must be trained to do so. The approach is subtle and recondite. The so-called free association procedure is often used—a method in which the subject responds to certain words by uttering the first word that comes into his thoughts. This means that the examiner must be an expert in an esoteric field of psychology. The vital factor is not mechanical but human. The examiner must have highly specialized knowledge of what and how to ask and how to interpret the recorded reactions.

The requisite attributes of an expert interpreter are long experience in business, criminal, social, and professional matters, complete honesty, wide knowledge of the world. This man, who sounds more divine than human, must also be properly trained in the use of the apparatus. Currently there is both enthusiasm and skepticism about the reliability of lie detection.◀

Physician's Bull., (Lilly), 23:82-85,1958.

Fertility: Promotion and Inhibition with the New Progestational Steroids

Results indicated that most of the compounds tested effectively replaced endogenous progesterone

HENRY J. OLSON, M.D., *Los Angeles, California*

So-called oral progesterones have been available for years, one of the most commonly employed being ethisterone. While effective to a certain degree as a progestational agent, ethisterone has a limited degree of potency in the usual dosage range. Intramuscular injection of progesterone is effective in doses of 100 mg. but may cause moderate to severe local reactions, while oral administration, even in doses as high as 750 mg. to 1 Gm. daily, produces weak and unreliable therapeutic response.

Considerable chemical and pharmacologic activity for the past few years has been directed at synthesis of therapeutically efficient progesterone-like substances. Many of these new substances have been made available clinically, of which norethindrone (19-nor-17 alpha-ethinyl testosterone), norethynodrel (17-ethinyl estraenolone), 17-AHPC (17-alpha-hydroxyprogesterone caproate), 17-alpha-acetoxyprogesterone, and BKP (9-alpha bromo-11-ketoprogesterone) are evaluated in this study.

Evaluation was based on observations of over 600 patients presenting a variety of conditions including infertility, spontaneous abortion, and conception control problems.

Studies over the past few years

indicate that inadequate corpus luteum function causes secretory hypoplasia of the endometrium which may be the etiologic cause of certain cases of infertility. Where this is suspected, progestational therapy should be administered during the postovulatory phase of the cycle to supplement intrinsic hormone secretion. In the present series dosage of norethindrone and norethynodrel for this indication was 10 mg. daily orally for 10 days as soon as the patient was believed to be postovulatory, then 10 mg. every other day. The same schedule was employed for 17-alpha-acetoxyprogesterone and BKP, but dosage was 100 mg. orally. A single injection of 180 mg. hydroxyprogesterone caproate was given on the third postovulatory day.

Of 79 patients receiving norethindrone, 11 pregnancies occurred during the first 2 cycles of treatment and 8 during the third to sixth, a total of 19 pregnancies (24%). With norethynodrel, 5 of 68 patients conceived during the first 2 cycles of therapy and 9 during the third to sixth, a total of 14 pregnancies (20%). When 17-AHPC was employed in 60 patients, there were 8 pregnancies during the first two cycles and 8 during the third to sixth, a total of 16 (27%). Two pregnancies occurred during the third to sixth cycles among 18 patients receiving 17-alpha-acetoxyprogesterone. With BKP two pregnancies occurred during the first two cycles and one during the third to sixth among 19 patients (15%).

SPONTANEOUS ABORTION

Certain cases of habitual abortion are undoubtedly attributable to inadequate corpus luteum function. One of the most important principles of progestational therapy for this indication is that it should be initiated before conception. Dosage and duration of treatment are the same as for inadequate luteal phase. For threatened abortion the dosage of norethindrone and norethynodrel depends on the amount required to stop bleeding.

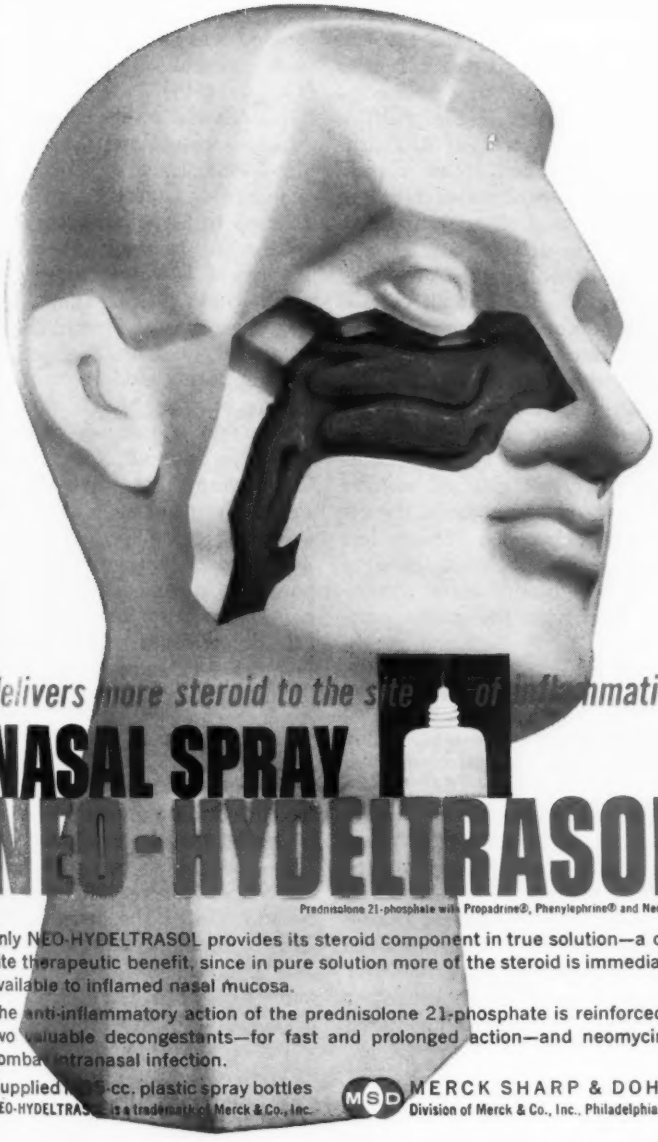
Among 22 patients representing 86 previous abortions and receiving either hydroxyprogesterone caproate, norethindrone, or norethynodrel, 10 full-term pregnancies occurred, 5 patients still being pregnant at the time of writing. Of the full-term pregnancies, 7 occurred in 15 patients receiving hydroxyprogesterone caproate, 1 in 4 receiving norethindrone, and 2 in 8 receiving norethynodrel.

HARMFUL EFFECTS

Two patients in the series receiving 50 mg. of norethindrone daily for threatened abortion developed voice changes related apparently to administration of the medication. In high doses this compound may also be mildly androgenic. The masculinization of the female fetus in association with high doses of progesterones has also been reported, and in the present series one patient developed marked jaundice while receiving 40 mg. of norethindrone daily for threatened abortion. Although these isolated instances are not statistically important, they suggest the types of difficulties which might be encountered, especially after long-term administration in patients unusually sensitive to these compounds.

FERTILITY INHIBITING EFFECTS

Administration of an estrogen or progesterone in sufficient quantity



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during the preovulatory phase of the menstrual cycle may inhibit ovulation and thereby eliminate the possibility of conception. When progestational agents are employed for this effect, it is difficult to establish with certainty that true suppression of ovulation has occurred. Despite this inherent handicap toward establishment of a controlled study, clinical results in the present series indicated that ovulation was often suppressed, although not invariably.

In 214 patients actively using the oral preparations for a total of 2,134 treatment months, 22 pregnancies occurred, a rate of 8.6 per cent as compared with that of about 4 per cent when diaphragms and contraceptive jellies are employed. It is significant that seven of the patients becoming pregnant claimed regular use of the medications, while the remaining 15 admitted more or less irregular use. Pregnancy rates were lower with norethindrone and norethynodrel than with the other compounds tested.

SIDE EFFECTS IN FERTILITY CONTROL PATIENTS

Of 474 patients discontinuing the oral contraceptive method before the studies were completed, 66 (24%) did so because of gastrointestinal reactions. Norethynodrel produced more of these reactions than any of the other compounds. In some patients, especially those who withdrew from the study, vomiting and/or diarrhea also occurred. After the first cycle many of the patients receiving norethynodrel acquired a tolerance to the drug and were able to continue treatment.

Whenever breakthrough bleeding or "spotting" occurred in the patients, dosage was doubled until this effect was controlled. Despite this, 74 (41%) of the patients discontinuing the study did so because of abnormal bleeding in various degrees. Excluding instances of definite pregnancy, amenorrhea caused discontinuance of therapy in 32 patients (18%). Oligomenorrhea not relating to previous menstrual flow was experienced by some patients. Both amenorrhea and oligomenorrhea occurred notably less frequently among the patients receiving norethynodrel.

One obvious finding was the occurrence of breast soreness earlier in the cycle. Several patients offered the information that their libido was markedly reduced during therapy, occurring more frequently with norethindrone than with the other compounds. Unusual headaches or dizziness were also reported but were considered severe enough in only a few cases to require discontinuance of therapy.

NORMALCY OF CYCLES AFTER DISCONTINUATION

In general, there is little likelihood that the first post-treatment cycle will be prolonged or ovulation delayed. The observation of occasional instances of prolonged intervals between cycles in the present study indicates that the changes in ovarian-pituitary function may persist for some time, but not permanently.◀

J.A.M.A., 169:1843-1854,1959.

The Syndromes of Cerebral Dysfunction

An understanding of the total problem must be considered in treating neurologic disorders arising from birth injuries

ERIC DENHOFF, M.D., and MAURICE W. LAUFER, M.D.,
Providence, Rhode Island

Many of the children who have been saved from an intrauterine or a neonatal death, have cerebral palsy, mental deficiency, or epilepsy. Some who appear normal have sensory or behavioral disturbances. In the past 15 years, a premature infant's chance of survival has been greatly increased.

However, many infants are surviving with congenital heart disease, congenital deafness and blindness, cleft palate, hare lip, tracheo-esophageal fistula, hydrocephaly, spina bifida, meningocele, kidney and gastro-intestinal anomalies. These states stem from intra-uterine infection and anoxia during the early weeks of pregnancy. They are "stage-specific" defects in tissue differentiation. Since they evolve during a period when the brain is undifferentiated and particularly susceptible to oxygen lack, it would seem unlikely that the nervous system should escape the adverse effects of anoxia. Children with non-neurologic congenital disorders often have concomitant nervous system (C.N.S.) dysfunction.

The individual clinical syndromes considered here are cerebral palsy, mental retardation, epilepsy, and the hyperkinetic behavior disorder. Childhood schizophrenia may possibly be included. A variety of sensory disturbances are usually found with

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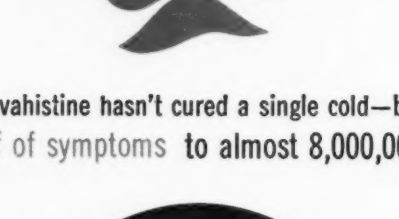

With the introduction of Novahistine, a better and *safer* way to relieve symptoms of a cold became available to physicians. The synergistic action of the Novahistine formula...combining an orally-effective vasoconstrictor with an antihistamine...promptly clears the air passages and checks irritant nasal secretions. NOVAHISTINE can eliminate the problem of rebound congestion and damage to nasal mucosa in patients who misuse topical applications. • For long-lasting "Novahistine Effect" prescribe Novahistine LP Tablets...which begin releasing medication as promptly as conventional tablets but continue bringing relief for 8 to 12 hours. Two Novahistine LP Tablets in the morning and two in the evening will effectively control the average patient's discomfort from a cold. Each tablet contains phenylephrine HCl, 20 mg., and chlorprophenpyridamine maleate, 4 mg.

*Based on National Prescription Audits of new Novahistine prescriptions since 1952.

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these major disabilities, or may be found independently. The six major categories of dysfunction and various combinations of these, depending on what areas of the brain are involved are:

1. Neuromotor—varieties of cerebral palsy.

2. Intellectual—subnormality due to brain injury or other organic causes.

3. Distortions of Consciousness—varieties of convulsive disorder.

4. Neurosensory—impairment of vision or hearing of neurological origin.

5. Behavioral—the syndrome "hyperkinetic impulse disorder."

6. Perceptual—difficulty in perception, a result of any of the factors mentioned, and to consequent difficulties in learning and establishment of normal relationships.

A child may be classified "cerebral palsy" if in his case the neuromotor aspect dominates the total picture. He will be called "mentally retarded, organic type," if primarily his intelligence is impaired; or "epileptic" if mainly featured by convulsions; or a "blind," a "deaf," a "speech" or a "behavior" problem, depending upon the principal symptoms. The name of the syndrome portrays which symptom-sign component dominates the total picture in the child under consideration. The realization for the need of a descriptive term which emphasizes function as well as morbid anatomy in children with neurological handicaps has evolved over a 25 year period. Among the reasons for the recognition that behavior of these children may not be static are:

1. The unpredictableness of the medical, educational, and social adjustments of children diagnosed as "brain-damaged."

2. Poor correlation between neurological symptoms during life and neuropathological findings at death.

3. Growing evidence to indicate that neurologic disability is reversible in cases in which chemical enzymatic factors are responsible for brain damage, if deficiencies are corrected in early life.

4. Recent neurophysiological evidence that total behavior can be influenced through stimulation of neutral pathways which interweave various parts of the cortical sensory and motor systems with the brain stem and cerebellum.

5. A realization that new terms are needed to express a child's abilities and disabilities if favorable doctor-patient-therapist relationships are to be attained.

Interest in the problems of childhood behavior as related to brain damage or dysfunction has increased over the years. Bradley[1] was amongst the first to describe an "organic syndrome" of behavior. He observed that associated with brain damage were hyperactivity, brief attention span, irritability, and mood changes. Some years later, he correlated some anoxia-producing disorders of birth and infancy with the special type of behavior previously described.[2] These behavior characteristics, which are now called the "hyperkinetic behavior syndrome" were found in a large number of children who, as infants, had various diseases or were partially asphyxiated at birth.

Our experiences have suggested that there may be a great lack of

1. Bradley, C., *Am. J. Psychiat.* 94:577-584,1937.
2. Rosenfeld, G. B., & Bradley, C., *Pediatrics,* 2:74-84,1948.

correlation between degree of C.N.S. involvement, and degree of impairment of function and satisfactory performance. The behavioral and learning aspects may be far the more important.

A new electro-encephalogram (EEG) procedure, the Gestaut Photo-Metrazol test,[3] provides a method which explores, deeper than an ordinary EEG, the functioning of the brain. When a measured amount of metrazol is given intravenously to a child who is being exposed to the flickering of a standard stroboscopic light, while an EEG is being recorded, a photometrazol threshold is obtained. One which is lower than normal suggests damage to or dysfunction of the diencephalon.

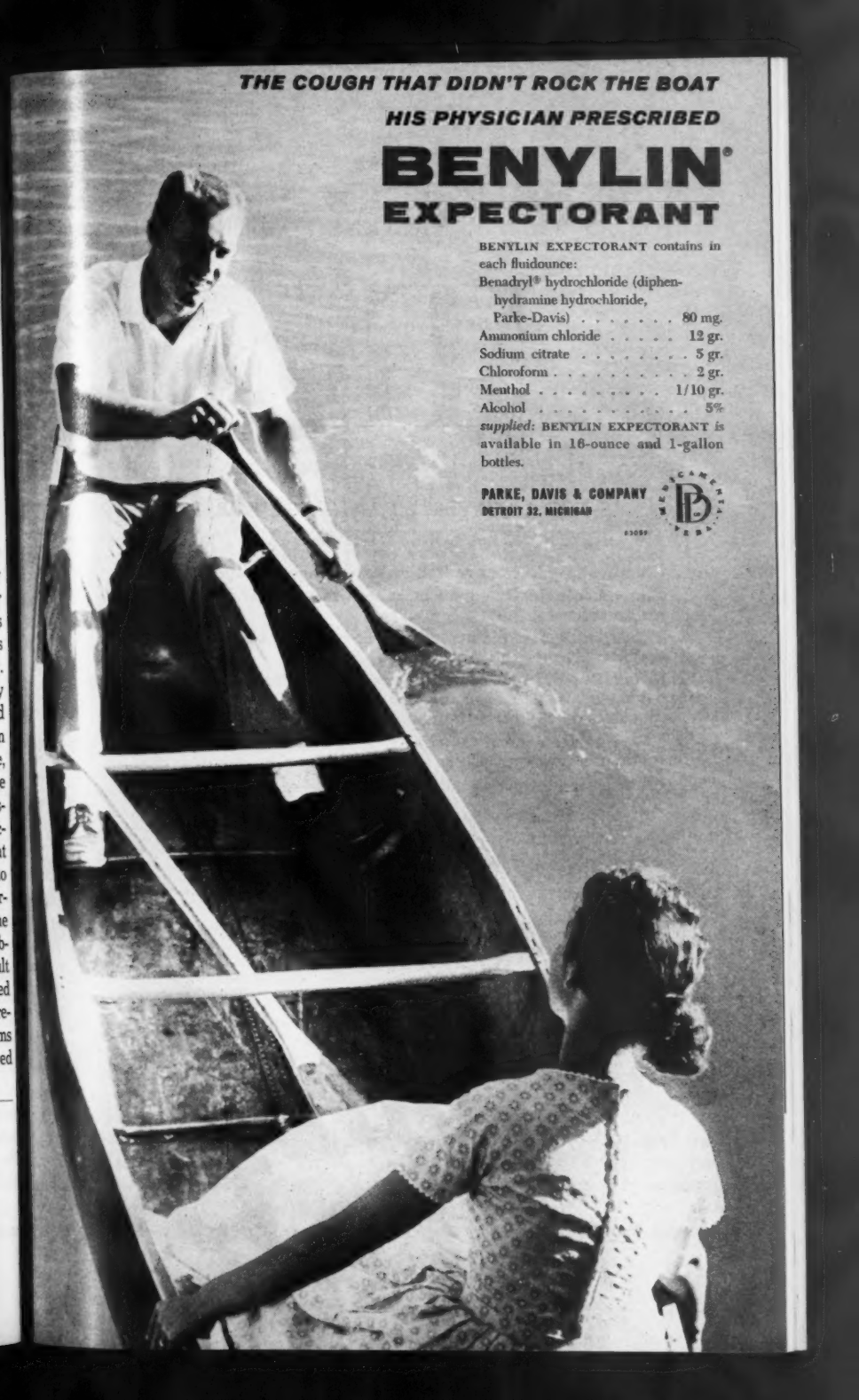
Problems involving dysfunction of the nervous system in childhood are increasing in frequency. Treatment directed only to the correction of the physical defect without including treatment for the behavior, perceptual or emotional factors, may result in salvageable infants becoming unsalvageable adults. Mental retardation, if present, frequently improves when motor, sensory, and behavioral features are corrected. With a mild to moderate physical handicap, an emotionally well adjusted handicapped child can function intellectually at a higher level than can an anxious and fearful child of comparable physical status. Motivation and redirection are essential parts of treatment. Since the terms "brain-damaged child" or "brain-injured child" connote permanent disability, it is suggested that these terms be replaced by the term "Syndromes of Cerebral Dysfunction." This change will help parents accept a treatment program which can be long and discouraging.

All doctors who treat children must be prepared to give service to the ever increasing number with neurological handicaps. These may appear as related to learning disabilities and perceptual difficulties (often found in children without overt physical disability and of normal intelligence). Many of these children are called behavior problems, and their condition blamed on poor parent handling. Many are inadequate neurologically or mentally. Many are minimally damaged children. Much of their aberrant behavior has a physical as well as an emotional basis, and is treatable medically and educationally.

A group of children with a variety of neuromotor, mental, sensory, and behavioral abnormalities, singly or in combination and varying in degree, with similar causative factors in the history, have in common characteristics ascribable to cerebral dysfunction. There is evidence to suggest that the clinical disturbances are due to cerebral dysfunction, as well as cortical damage. Failure to recognize the importance of treating the total problem of the child's handicap will result in therapeutic failure. It is suggested that the term "Syndromes of Cerebral Dysfunction" replace the terms "brain-damaged" and "brain-injured child."◀

3. Lindsley, D. B., & Henry, C. E., *Psychosom. Med.*, 4:140-149,1942.

J. Oklahoma M.A., 52:360-366,1959.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Malignant Irradiation for Benign Conditions

Used indiscriminately or carelessly, x-ray therapy may produce disease that is more serious than the original

BRADFORD CANNON, M.D., JUDSON G. RANDOLPH, M.D., and JOSEPH E. MURRAY, M.D., *Boston, Massachusetts*

A growing public awareness of the dangers of excessive exposure to irradiation has focused the attention of the medical profession on the serious early and late effects of such exposure, a matter that has concerned the surgeon, particularly the plastic surgeon, for decades.

The records of some of the disabling and life-endangering consequences of the use of irradiation, accidentally or in the treatment of benign conditions, were examined in a total of 165 cases. In each, surgical treatment was performed or recommended for the damaged tissue.

A deficiency in this report is the failure to determine exact dosages of irradiation to each patient. Complete and accurate evidence has been impossible to obtain for several reasons. The treatment was given many years ago by physicians who have died or whose records are either incomplete or unavailable. In professional workers the exposure was in small amounts over many years. Clinical and pathological evidence of chronic irradiation damage in the diseased tissue sufficed to incriminate the exposure as a major cause.

Nearly half the patients' chief complaint was persistent ulceration, pain was the chief symptom in a fourth of them. One-eighth of the total sought aid for cosmetic reasons. Of

the 28 professional workers, 16 were physicians; radiologists, orthopedic surgeons, and general physicians exposed in the first score of years after the discovery of x-ray. Those who were more recently injured appeared indifferent to the known dangers of irradiation. Several were technicians and dentists whose unprotected hands or fingers were injured by many years of repeated exposure to small quantities of x-rays.

Of the 32 cases of plantar wart, surgery was indicated for irreversible radiation changes in the foot. The average time lapse from exposure to surgical treatment in this group was 5½ years. Nineteen patients with eczema, psoriasis, lichen planus and so forth, treated with x-rays, had severely injured skin and soft tissue. The period between exposure and skin breakdown was 14 years. Hemangiomas given a small dose or doses of x-rays in infancy account for 14 cases, the average time before seeking surgical help, 20 years. Twelve cases of tissue damage followed the use of x-rays for removal of unsightly hair. The complications of this unregulated method of epilation, popularized about 30 years ago, are still being seen.

The sequelae of irradiation for acne may be serious. Of 10 cases observed for irradiation ill-effects, cancer developed in nine. A number of other patients seeking treatment for unsightly acne scars gave a history of x-ray treatment to the face. The evidence suggests that neoplastic changes can be anticipated in their skins. There was, in addition, an odd assortment of diseases treated by sufficient x-ray to produce severe skin damage —Dupuytren's contracture, pruritus, pulmonary tuberculosis, goiter, rheumatism, spondylitis, furuncle, gallbladder colic and cervical adenitis.

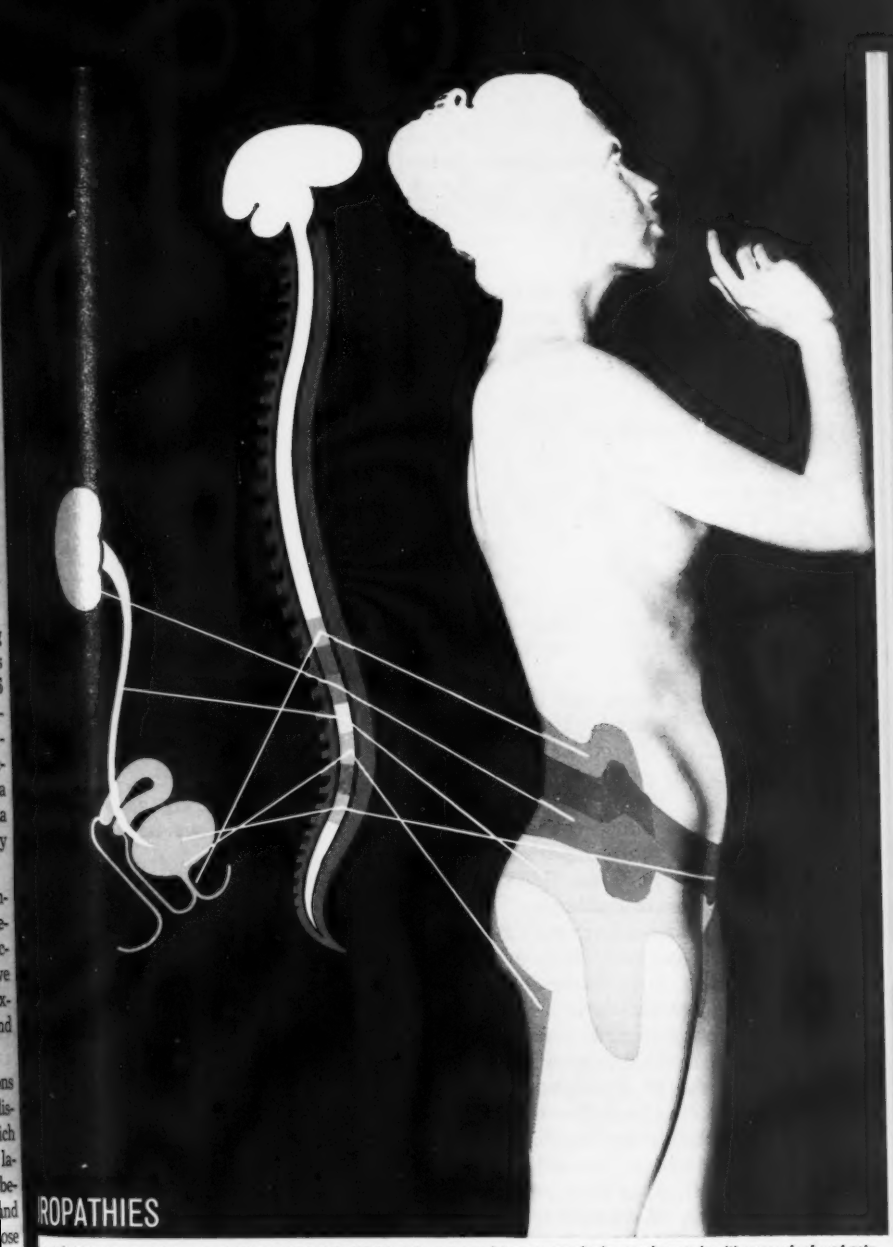
Cancer was found in 36 of this series of 165 cases (22%), the interval between x-ray exposure and diagnosis of cancer ranging from five to 50 years. Optimistic reviews have been based on patients followed for five to 23 years. In the present study the average interval for the development of cancer was 28 years, emphasizing the slow but relentless progression to malignant change that can be predicted in a significant number of those more recently exposed. Only by prophylactic excision of all severely injured skin can the malignant transition be prevented.

Contrary to the accepted teaching that only epidermoid carcinoma is found in irradiated areas, 14 of the 36 cases of cancer were of the basal-cell type. With one exception, a physician's hand, all basal-cell lesions occurred on the face. This finding of a predominance of basal-cell carcinoma in irradiated skin of the face has only recently been reported.

Seventy-six patients were presumably cured after one surgical procedure, an additional 15 required a second excision. The remainder have needed multiple operations with extensive reconstructive procedures and other forms of surgery.

Irradiation for benign conditions may produce tissue changes more disabling than the condition for which the x-rays were administered. A latent period of several decades between exposure to irradiation and tissue breakdown is common. Those who administer the irradiation may be unaware of the late consequences.

Cancer developed in 22% of the 165 cases reviewed in this study and can be predicted in others. Contrary



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to previous teaching, carcinoma in irradiated skin of the face is usually of the basal-cell type, of high morbidity; but death from radiation necrosis is rare.

Surgical therapy should be prompt and thorough. Prophylactic excision may preclude the ultimate development of carcinoma.

Evidence gained from this study and those of others suggests that those not fully qualified in the therapeutic use of x-rays be excluded from the use of this potentially dangerous means of diagnosis and treatment.◀

New England J. Med., 260:197-202,1959.

Reiter's Syndrome

In 1916, Reiter described a syndrome of urethritis, conjunctivitis, and arthritis. He attributed the triad was caused by a spirochete, but subsequent studies have not supported this theory. In recent years there has been increasing interest in this condition. There is controversy as to the etiology and mode of transmission. In few cases can specific organism be isolated. The condition may be of an allergic or rheumatoid nature. Of 344 cases reported in Finland (up to 1948), 75% were preceded by bacillary dysentery. No such findings were reported in the United States or Great Britain. It is most likely a viral disease.

The signs and symptoms are many, primarily of conjunctivitis, urethritis, and arthritis of an abacterial nature. Here the intestinal type will be omitted. The first finding is usually a nonbacterial urethritis, acute or subacute; discharge clear to purulent, sometimes bloody. It usually lasts a few days but may become chronic or cause a cystitis, prostatitis, epididymitis, orchitis, or even nephritis, as complications. Next comes conjunctivitis, commonly bilateral and varying greatly in severity: complications are iritis, iridocyclitis, corneal ulceration, keratitis, and optic neuritis. The polyarticular is the most severe involvement, may last weeks to a year. The onset is with malaise, fever, and an elevated E.S.R. The weight-bearing joints are usually involved. In one series the knees showed effusion in 75% of the cases, the ankles in 55%. Subchondral bone changes vary from slight to diffuse atrophy and fleck-like decalcification. Residual stiffness of joints, muscle atrophy, and ankylosis have been reported, but are rare. Erythematous macules (few mm. in size) become waxy papules which coalesce and form hyperkeratotic plaques. Healing generally occurs after several weeks with no residual.

There is usually a mild leukocytosis, lowered hematocrit, elevation of E.S.R., and pyuria.

Gonorrhea, bacillary dysentery, lymphopathia venereum, erythema multiform bullosum, rheumatoid and infectious arthritis may be ruled out early in the great majority of cases.

Rest, sedation, salicylates and fluids help the articular symptoms. Steroids, if used, should be in doses of 50-80 units ACTH, or 75-100 mg. cortisone, per day, not be stopped abruptly. As a rule, conservative management is best although this may be prolonged. Recovery is the rule. The articular involvement may persist for a year or more.

Kestel, J. L., Jr., et al., *Nebraska M.J.*, 44:111-115, 1959.

Management of the Depressed Patient

The improvement rate of 73 per cent with electroshock therapy can be increased by judicious selection of the patients

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MAURICE J. BARRY, JR., M.D., et al., *Rochester, Minnesota*

Of all the clinical problems that confront psychiatrists, depression is the most frequent, most concerns the patient and his family, and most perplexes the doctor. Depression can be an evanescent symptom of a wide variety of diseases, or a chronic crippling psychosis. Depression marked by severe agitation, anxiety, and serious disturbances of sleep and self-derogation, requires a regimen that includes hospital care on a psychiatric ward.

Patients who have extreme feelings of guilt and personal worthlessness are most likely to believe that their own death would be "better for everyone concerned," are in danger of acting out this false impression, and should be admitted to a hospital. It is an error that may well be disastrous to treat lightly any self-destructive thoughts that the patient may relate.

The effectiveness of analeptics such as dexedrine, ritalin and meratran are questionable, especially in the treatment of patients so ill as to require hospital care. A mixture of meprobamate and benzactyzine has promise and has been reported to produce improvement.

The most effective, safest and most rapid method of treatment remains electroshock. The improvement rate of 73% can be greatly increased by judicious selection of patients. In general, the prognosis is much better in those patients with relatively "pure"

depressions uncomplicated by paranoidal, hysterical or severe obsessional symptoms. The prognosis is better in those severe depressions, particularly if the illness is of rapid onset and provoked by great precipitating stress. The situation to which the patient will return is of great importance in the long-term prognosis. Since we have muscle relaxants, there are almost no positive contraindications to this therapy. We prefer not to give it to patients with active myocardial disease or recent infarcts of heart or brain. Succinylcholine is the muscle relaxant of choice, administered with a small dose of thiopental (pentothal) by vein. The average course consists of eight treatments, given three times a week. Resulting disorientation, confusion, and loss of memory are insignificant and generally disappear within three weeks. These results may be the source of anxiety for relatives as well as for patients.

In many other situations, with proper safeguards and precautions for the patients' protection, it is possible to give electroshock therapy as an outpatient treatment. After the course is completed, premature exposure to situations that may bring ridicule to the patient or lessen his self-esteem must be prevented. It may be necessary to keep the patient in the hospital until the confusion disappears. Repeated courses of treatment may be required.◀

Proc. Staff Meet. Mayo Clin., 34:83-95,1959.

Manic-Depressive Reaction

Successful treatment of this type of psychotic patient depends on a carefully timed program of therapy

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Editorial, The Psychiatric Bulletin

Alternate episodes of immoderate elation and severe depression characterize the "manic-depressive" reaction. Either extreme may vary in duration from less than a day to many years, and may recur after intervals of stability. Disorder that is characterized by elation or excitement, with logorrhea, rapid thought sequence, and hyperactivity is described as "manic depressive reaction, manic type." In "manic depressive reaction, depressed type," depression is characteristic, and psychomotor retardation and apprehension are sometimes evident. A combination of both disturbances is the "mixed type"; continuous alternation between the two is the "circular type." The "cycloid" personality is the most frequent prepsychotic personality structure in manic-depressive patients. The cycloid is an active, friendly, practical, extroverted person, in contrast to the schizoid, who is introspective, shy, and more interested in ideas than in persons.

PROGRESSION OF DISORDER

The transition from cyclothymic personality to manic-depressive reaction is a gradual one, and, in both the manic and the depressed phases, there are stages of progression. The disturbance may be arrested at any stage, or a stage may be passed without symptomatic evidence. The mildest form of mania (hypomania) is

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haracterized by overactivity, exaggerated enthusiasm, jocosity, and uick thought association. The person s apt to plan and sometimes executes expansive programs in such ursuits as business enterprises, roup organization, and charitable orks. He is usually exceedingly affable during this stage, but is intolrant of criticism, and may become ritable if his judgment is questioned.

The second stage, acute mania, is ntensification of the signs of stage ne. The patient develops psychootor hyperactivity, elation, and rapd flight of ideas. Food and sleep are ften neglected. The patient may use rofane and obscene language, and ndulge in alcoholic and sexual exesses. Although intelligence, orientaon and memory remain intact, retraint is lost, and the patient may ct upon grandiose schemes, make unise investments, and purchase useess, expensive objects. He may have pells of depression with crying, or ay become combative, destructive. e is easily distractible and outbursts f antagonism can be diverted, but ot prevented.

The third stage, delirious mania, is haracterized by disorientation, halcinations and delusions not uncomonly. The state is one of intense, ustained excitement, frenzied activy, and incoherence. Distractibility is uch that neither sentences nor simle activities can be completed before he succeeding ones are started. This tate may result in loss of environental contact, physical exhaustion, nd collapse, sometimes with cardiac nd respiratory difficulties.

The stages that precede the dessed phase of manic-depressive rection are, symptomatically, opposite o those in the manic phase. Mild depression psychomotor inhibition, slowed thought, depressed affect, frequently complaints of fatigue, sleeplessness, dyspepsia, and constipation. Self-blame, anxiety, feelings of inadequacy, and suicidal ideas may be expressed. There is decreased interest in activities, and even the small undertakings of a daily routine may seem overwhelming.

In acute depression, the mood is one of hopelessness, dejection, and despondency. Psychomotor retardation is more pronounced, speech is limited. The patient may maintain a hypotonic position or move about in restless agitation. Anorexia, weight loss, early-morning sleeplessness, cessation of menses, constipation, and decreased sexual inclination are parts of the picture. Complaints may be made of wasting away of the brain, decay of segments of the body, or strange, incurable disease. Auditory and olfactory hallucinations occur, and feelings of unreality or unworthiness may be expressed, in addition to delusions of sin and of poverty. Most hazardous to the patient, are the ideas of self-depreciation, self-mutilation, and self-destruction. Suicide is a constant danger. In the patient's tormented state of mind his thoughts are insupportable and he becomes mute, immobilized and apathetic. With cessation of voluntary motion, the patient may also suffer from dehydration, inanition, circulatory disturbance and hypomyotonia.

DIFFERENTIAL DIAGNOSIS

Hereditary predisposition may be influential; manic depressive reactions recur in successive generations. The disorder occurs more frequently in women, usually after the age of 20.

A patient with early paresis may behave in a manner similar to that of the manic individual. A depressed paretic may evidence psychomotor retardation, and may attempt suicide. The diagnosis of paresis can be established by blood and spinal fluid examination. Impairment of intellect, defective memory, and disorientation are not symptoms of the manic-depressive reaction. Except temporarily, the intellectual ability of a manic-depressive patient is unimpaired, regardless of the number of attacks sustained.

In the schizophrenic, hallucinations and delusions are frequent, as is intellectual and emotional deterioration. The depression of the schizophrenic seems to have no pronounced subjective feeling, and there is a discrepancy between mood and verbal expression. The excitement of the schizophrenic is seemingly unrelated to the environment, whereas the manic is greatly stimulated by his surroundings. The speech of the schizophrenic may be rapid, but his thoughts are disconnected and bizarre. The humor and wit of the manic patient is generally contagious; that of the schizophrenic is not. Finally, manic depressives feel strong emotion in either phase, while the schizophrenic affect is diminished.

TREATMENT

The treatment of patients with manic-depressive reaction includes protection from injury, provision for adequate nutrition and hydration, hydrotherapy, and occupational therapy. Psychotherapy is most helpful during periods of remission. Specific organic therapy includes drug therapy, electric shock therapy, and prefrontal lobotomy. Shock therapy has been the treatment of choice for many years with prompt relief of symptoms in a great many cases. Recently, tranquilizing drugs, singly or in combination, have produced happy results.

Favorable prognosis is dependent upon adequate supportive therapy, prevention of suicide, and judicious administration of electric shock treatments. Patients who do not recover develop a mild chronic invalidism.

Patients with early attacks of either type may be cared for at home. Repeated attacks are likely to last longer, and the patients should be hospitalized to receive more intensive therapy.

The number of persons with this disorder has decreased by one-third in the past 20 years. This decrease may have resulted from socio-cultural changes: the psychodynamic conflicts which influence development of this particular form of psychosis are peculiar to an inner-directed type of society which has begun to disappear in this country.

Editorial, *The Psychiatric Bulletin*, 8:22-24,1958.

Use of Spinal Anesthesia in 3585 Cases in a General Hospital

This form of anesthesia is safe and feasible in abdominal surgery and can be administered easily

ROBERT M. HILL, M.D., *Ellensburg, Washington*

Anesthesia is part of the surgeon's responsibility to the patient in ethics as well as in law. The legal aspect is especially significant in areas where no physician anesthetist is available. I believe spinal is the safest and easiest anesthesia for all major and some minor procedures below the diaphragm. This experience of myself and two other members of the clinic, cover the period 1945-1957, in a 35-bed hospital with the aid of a nurse anesthetist. Mortality was almost nil, morbidity extremely low. In most cases the anesthetic was given by either the surgeon or the assistant surgeon.

Most of the criticism by professional and lay people is unjustified. In the 3,585 operations, the greatest number was abdominal; 224 were genitourinary, including nephrectomy, resection of bladder tumor, and prostatectomy. There were 350 vaginal, including hysterectomy and vaginal repair. There were 107 cesarean sections, 216 rectal operations, 201 on bone, 496 hernia repairs. The 406 minor procedures included cystoscopic examination, bunionectomy, vein stripping, removal of rectal polyps, orchidectomy, and hemorrhoidectomy.

Spinal anesthesia was used in all

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**Granberry, C., and Beatrous, W. P.: The Effect of an Antibiotic Chewing Troche on Post-Tonsillectomy Morbidity, E. E. N. T. Monthly (May) 1957.*

cases requiring anesthesia other than local for surgical procedure below the diaphragm, irrespective of condition of the patient, and the age, except for children under 12 years. Ages ran from 12 to 94. Supplemental intravenous Pentothal was used for those who were apprehensive, nervous, or excitable; those who, after the spinal anesthesia had been given, felt pain; those in whom the procedure was prolonged, and anesthesia beginning to wear off.

Gastric, bowel and abdominoperineal resection required the greatest operative time. It was not necessary to use continuous injection of the anesthetic. In a very few cases of the latter, it was necessary to give Pentothal because the anesthesia began to wear off. The same was true of cholecystectomy. During cholecystectomy traction or pressure would frequently produce a fall in blood pressure. In most cases this could be prevented by injecting 1% procaine into the gallbladder peritoneum. The amount of Pontocaine used varied with the size of the patient and the operation. Small amounts were needed in those procedures that did not involve entering the peritoneal cavity. Pontocaine required for appendectomy averaged 12 mg., for gastric resection 22 mg., for leg amputation 8 mg., for presacral neurectomy 12 mg., for bunionectomy 6 mg.

Complications fall into three groups: those due to anesthesia, those due to surgery, and those of miscellaneous causation. Complications directly attributable to spinal anesthesia may be headaches, gas pains, ileus, urinary retention, backache, neurologic sequelae, shock or death on the table before the surgical procedure is started.

Headaches are probably due in most cases to the puncture. Of these, only 36 (1%) were severe. They persisted at least 48 hours, were pounding, severe, and difficult to relieve. Forty (1.1%) were moderately severe, lasting 48 hours or more, but responded to medication, 187 (5%) were mild, lasting less than 48 hours and responded well to simple medication. The severe and moderately severe headaches were brought on especially by raising the head. Some responded to Dramamine and some to dihydroergotamine.

Ileus is attributed to the anesthetic or to manipulation in a ratio about 50:50. This is also true of pain due to gaseous distention. Urinary retention is frequent after other types of anesthesia. Backache is difficult to interpret. It seldom continues after the patient is up and around for a few days.

Most of the cases of shock were in poor-risk patients, those with previous shock, cardiac disease, severe trauma and, in some cases, apprehensive patients. There were four patients with shock directly attributed to the anesthetic. They were not responsive to stimulants and surgery was deferred. In all cases a spinal anesthetic was used 24 hours or more later and the surgery was performed.

Death could only once be attributed directly to the anesthetic. This was in a very debilitated patient with carcinoma of the bladder, generalized carcinomatosis and acute urinary retention. The anesthetic was given, blood pressure fell, and he expired before any surgical procedure had been started.

Cystitis can be attributed to urinary retention, use of retention catheter, or repeated catheterizations.

No true neurologic complications have been diagnosed by examination; no patient complained of paresthesia or persistent anesthesia. Transient neurologic symptoms completely disappeared within five days in all cases. Those having cesarean section have had more trouble with spinal headache than others. No explanation is forthcoming.

All these sequelae have greatly decreased during the last six or seven years. We feel this is due directly to the fact that the patients were not allowed to remain in bed over 48 hours. There were only 38 cases of thrombophlebitis in this entire series of over 3,500—a far less incidence than following any other anesthesia.

Points in technique important for the prevention of headaches are:

1. The head of the table is tipped down for two minutes immediately after administration of the anesthetic.

2. The head of the table is elevated for one-half minute, and then the table is leveled.

3. At all other times, the patient's head is kept elevated with at least two pillows.

4. Postoperatively, the foot of the patient's bed is elevated for six to eight hours.

The spinal has proven to be a safe and satisfactory anesthesia. It requires minimal personnel, minimal worry and care during the surgical procedure and in the after-care of the patient.◄

Northwest Med., 58:850-854,1959.

Immunizations: Current Recommendations

Routine procedures administered during childhood provide life-long protection when supplemented by periodic boosters

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Editorial, Physician's Bulletin (Lilly)

Every physician who immunizes children knows that recommended dosage schedules change from time to time as our experience grows. Although there is still disagreement about the optimal schedule, many facts are known which allow the subject to be approached with a degree of rationality. It is generally agreed in the United States (though not in all countries) that all children should be routinely protected against pertussis, diphtheria, tetanus, poliomyelitis and smallpox.

PERTUSSIS

Because pertussis contributes heavily to morbidity and mortality rates in children under one year of age, vaccination against it is to be started as early as possible. The alum-precipitated vaccine gives best response in very young infants. Although on rare occasions it produces sterile abscesses, it is the agent of choice for infants, and immunization should be started by age one or two months. To maintain immunity, a booster dose should be given at 16 to 18 months, and again before entry into school. Beyond school age, routine pertussis injections are not recommended.

DIPHTHERIA

Routine immunization some time in infancy is clearly indicated. The proportion of the adult population immune to diphtheria is decreasing,

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PDR
1959, p. 683

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probably because of the reduction in the incidence of diphtheria—with less exposure, less immunity. Therefore, booster injections of diphtheria toxoid every three or four years are recommended for adults as well as children.

Dosages for infants and young children are fairly well standardized, but the problem of severe reactions arises in older persons. Because of repeated contact with the diphtheria bacillus (naturally or through the medium of immunization), sensitivity to the organism develops. Reactions in the sensitized may be severe; therefore, reduced doses of diphtheria toxoid are recommended for both older children and adults. After age five, children who have had the routine immunization in infancy should receive only about 5 Lf (0.1 cc. of standard diphtheria toxoid) every three or four years until age 11 or 12. Booster doses for older persons should be 1 to 2 Lf of diphtheria toxoid. Such a dose is adequate to boost immunity and causes few severe reactions.

A preparation containing 1.5 Lf of diphtheria toxoid and 7.5 Lf (standard dose) of tetanus toxoid per 0.5 cc.* has recently been made available. This may be used without the cumbersome preliminary Schick and toxoid sensitivity tests which are necessary with products containing standard amounts of diphtheria toxoid.

TETANUS

The wisdom of routine tetanus immunization for both children and adults can hardly be questioned. Serious reactions to the toxoid are rare. For convenience, basic immunization is given at the same time as diphtheria and pertussis, and continuing protection is provided by a booster injection every three or four years. There is evidence that if a person has had basic immunization and one booster, another booster dose will produce a prompt and high titer of tetanus, antitoxin, even if an interval of 13 years has elapsed since the last booster. Many believe immunity may be lifelong.

Diphtheria and tetanus toxoids can be combined with pertussis organisms to give satisfactory immunity to all three diseases. It is recommended that the toxoids be administered in the same injection as the pertussis organisms for basic immunization in infancy, for the 18 month booster, and for the preschool booster.

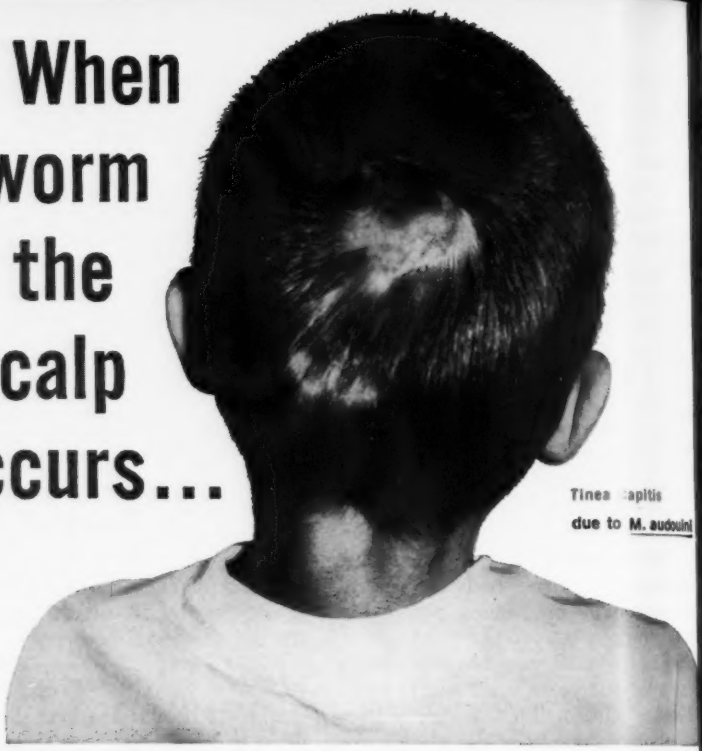
SMALLPOX

The first vaccination should be done in the first year of life. Though rare at all ages, vaccinia encephalitis is more apt to follow primary vaccination after one year of age. If the infant or any of his household contacts has eczema, vaccination is contraindicated because of the danger of generalized vaccinia in a person with eczema. If vaccination is performed very early in infancy, placentally transferred maternal antibodies may prevent a "take." In this instance, revaccination should be done at eight or 10 months. Failure to obtain a "take" because of natural immunity is rare. Failure is commonly due to the use of vaccine which has lost its potency through improper storage. It should be stored in the freezing compartment of a refrigerator.

Revaccination is recommended

Tetanus and Diphtheria Toxoids Combined, Alum Precipitated (For Adult Use), Eli Lilly & Company, Indianapolis.

When ringworm of the scalp occurs...



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very five years, before going abroad, nd in the presence of an epidemic.

OLIOMYELITIS

Although it affords protection gainst paralysis, there is evidence uggesting that it does not prevent he intestinal phase of poliomyelitis nfection. If this possibility is subtantiated, the reservoir of infection ill remain, and, in contrast to smallox or diphtheria immunization, hose who have not been vaccinated gainst poliomyelitis will not have rotection. Therefore, vaccination is ecommended for all persons.

The recommended dosage schedule s three injections of 1 cc. each, with ntervals of four to six weeks beween the first two injections and at east seven months between the last wo injections. The effect of a single injection probably is not lost even if a year elapses between injections.

It is suggested that poliomyelitis vaccination be begun at two months of age, and it may be given at the same time as other immunizing agents. Developmental work is progressing to include poliomyelitis vaccine with the triple diphtheria-pertussis-tetanus antigen, but until a satisfactory preparation is available, the two agents should be given in different extremities.

No firm recommendations have yet been made regarding booster injections. Some investigators have not as yet found any necessity for boosters beyond the initial three injections. Many clinicians are planning to give booster injections every one or two years until further information is available.◀

Physician's Bull., (Lilly), 23:78-80,1958.

eight Reduction with Diet, ercise and an Anorexigenic gent

A reducing program combining iet, exercise and an anorexigenic rug (Obolip) successfully restored deal weight within a period of less an three months in women 10 to 25 er cent overweight. The 48 overeight women selected for the proram were divided into four groups, which only one group received the rug for the first 12 weeks. At the d of this period, the subjects in is group had lost 87% of the total eight they were to lose in the entire rogram, compared with 72.5 per ent, 80 per cent and 77 per cent for e remaining three groups. The diet mployed supplied approximately 75 80 gm. of protein, 130 gm. of carbodrate, and 30 gm. of fat. Educational procedures included formal lectures and demonstrations, group discussions and individual consultation.

About 85 per cent of the subjects showed a tendency to overweight since childhood, and a dietary survey prior to the program revealed that all of them had a very limited knowledge of meal planning or of sound nutritional principles. Even with the intensive educational program there appeared to be an inability on the part of many of the subjects to continue a dietary regimen over a prolonged period, a factor contributing to the unsuccessful attempts of the majority to attain their ideal weight.

MacIntosh, R. G., et al., *Am. J. Clin. Nutrit.*, 7:132-138,1959.

briefs: MEDICAL

Diagnosis and Treatment of Migraine

Migraine is probably the most common of the headaches classed as vascular. It is paroxysmal, periodic, unilateral and throbbing. It occurs against a background of well-being, often is preceded by visual or psychologic disturbances, and usually is associated with vomiting and irritability. The syndrome is not limited to the head and may manifest itself in disturbances involving any system. These associated symptoms ("migraine equivalents") may occur without headache. Periodic abdominal pain associated with nausea and vomiting, for example, may be the major presenting symptom. For treating attacks of migraine the most useful drugs are the ergot derivatives, of which ergotamine tartrate is best. Various combinations of ergot derivatives with antispasmodics, sedatives, C.N.S. stimulants and antiemetics are useful for some patients. The optimal time for ergot therapy is in the prodromal period. For prophylaxis, psychotherapy and correction of physiologic abnormalities are helpful. A few patients respond well to anticonvulsant drugs. Migraine associated with menstruation can be prevented in some cases by use of progesterone or testosterone or by a low-salt diet with diuretic therapy.

Tension headache occurs in relation to constant or periodic emotional conflict, of which the patient usually is aware. These headaches have no prodromes, are usually bilateral, occipital, or frontal, and may be accompanied by a variety of associated signs, including anxiety, nausea, and vomiting. Treatment is nonspecific and is best accomplished by use of an analgesic-sedative combination. The best prophylactic treatment is psychotherapy. Tranquilizing drugs are helpful in some cases, but patients taking them should be kept under close medical surveillance.

Friedman, A. P., *Mississippi Valley M.J.*, 80:141-146, 1958.

Clinical Significance of the Rheumatoid Serum Factor

Many human sera can be shown to contain a factor or factors which enhance certain antigen-antibody reactions. This activity is present in high titre in the serum of patients with rheumatoid arthritis. Since 1949 the rheumatoid serum factor has been estimated by a technique using a sensitized sheep cell agglutinating system (S.C.A.T.) on sera from all patients admitted to the rheumatism beds of one infirmary and from selected groups of out-patients, also on sera collected during surveys of both random and screened samples of the general population.

A positive result in the S.C.A.T. was found in 93 per cent of 382 in-

patients with rheumatoid arthritis in whom great care was taken to establish the correctness of the diagnosis. Of these patients, 152 had subcutaneous nodules and 98 per cent had positive tests. Tests were positive in 70 per cent of 64 patients with rheumatoid arthritis of less than one year and in 68 per cent of 41 patients with rheumatoid arthritis in whom an alternative diagnosis was recorded at some stage of their hospital care. In both these groups the diagnosis was less certain, and this is reflected in the lower proportion of positive tests.

Some 40 per cent of positive tests were found in patients with systemic lupus erythematosus, with systemic sclerosis, and also in patients with a form of endarteropathy affecting digital or pulmonary vessels; but the S.C.A.T. was usually negative in other forms of arterial disease and in dermatomyositis.

A positive S.C.A.T. was found in only 6.7 per cent of sera from 1,392 patients hospitalized for other forms of arthrtiis, though many of these patients, such as those with atypical spondylitis, Reiter's disease, and psoriatic arthropathy, had severe inflammatory erosive polyarthritis which resembled rheumatoid arthritis in many respects. A positive S.C.A.T. was found in 5.7 per cent of 1,165 sera from a random sample of the adult population of one town. Positive tests showed a substantial degree of familial aggregation, being found in 20 per cent of 94 blood relatives of those with positive tests.

The rheumatoid serum factor may represent an index of some inherited metabolic characteristic which predisposes the individual to rheumatoid arthritis and certain other forms of disease that may not yet be fully defined. Conversely, many other forms of inflammatory erosive polyarthritis appear to be unrelated to this characteristic.

Kellgren, J. H., et al., *Brit. M.J.*, 1:523-531,1959.

Effects of Repeated Poisonous Snakebites in Man

From 2,000 to 3,000 snakebite accidents occur each year in the United States. During the period, 1950-54, there were 71 deaths. The two families of poisonous snakes indigenous to the United States are pit vipers and coral snakes. Of the pit vipers, the rattlesnakes and moccasins (copperhead and cottonmouth and pigmy rattlesnakes) the pit vipers are responsible for 98% of the poisonous snakebites in this country; less than 2% are inflicted by coral snakes.

The effects of repeated poisonous snakebites in 14 patients were studied. One patient had 12, one had 10, two had six, one had five, three had four, one had three, and five had two bites. Five patients had permanent local defects such as atrophy of muscles and amputation of digits following snakebites; none had evidence of chronic liver or kidney disease. There was no evidence of development of immunity to pit viper venoms, this is attributed to the long and irregular intervals. Thirteen of the 14 were scratch-tested for snake venom allergy, four found allergic to rattlesnake or moccasin venom or both. A patient may become allergic to moccasin venom even though he was bitten previously by rattlesnakes. The severity of repeated snakebites in nonallergic patients depends on the characteristics of the individual biting, not cumulative effects of previous snakebites.

Parrish, H. M., & Pollard, C. B., *Am. J.M. Sc.*, 237: 279-286,1959.

Occurrence and Duration of Pain in Patients with Duodenal Ulcers

It has been demonstrated that pain occurs during emptying of the stomach and not, as is generally assumed, when the stomach is empty. Stomach emptying was studied clinically in 98 patients and by x-rays in 84. The test meal consistsed of 70 grams of bread, 10 grams of butter, 30 grams of cheese and 0.4 liter of milk. The majority of the patients examined clinically required more than 5 hours for emptying; the majority of those studied by x-rays required more than 6 hours, although barium sulphate alone left the stomach in 3 hours. The periods of pain that occurred, began in from 1 to 4 hours, and ended from 3 to 5 hours after the meal, generally lasted 1 to 2 hours. During the slightly slow evacuation in the x-ray test, the duration of pain varied more. Pain never occurred after emptying of the stomach had been completed.

Dekkers, H. J. N., & Willink, J. W. T., *Nederl. Tijdschr. Geneesk.*, 102:2368-2371,1958.

Living and Working with Heart Disease

Before attempting to adjust a person's work situation to the capacities of a damaged heart it is well to be certain that he has heart disease. There is ample reason for optimism as to the occupational potentialities of many of those with cardiac disease. Some of the relevant factors emerging in the course of these analyses are: older age, lack of motivation, lack of education, skill or aptitude; limited employment opportunities in the labor market, fear on the part of the patient, his family, his doctor or a prospective employer; legal litigation, difficulties in travel, deficien-

cies in medical knowledge. The existence of heart disease in an older person certainly does not enhance his possibilities. Some communities have sheltered workshops for those who cannot find regular employment. Vocational re-training may be advisable in a few cases, but should be undertaken only if there is a reasonably good chance of a job being available.

Those whose physical condition would permit full-time or regular employment, but who lack the will to work may need psychiatric help. The difficulty often rests on an emotional disturbance or other psychological maladjustment. Many of them appear not to want to be helped. Those with little education and no skills or aptitudes always offer employment problems. Heart disease adds to the difficulty and advanced age makes it practically hopeless. Scarcity of labor may create employment opportunities. Fear of dire consequences of resumption of employment can disable entirely. Over-protective families aggravate the situation and the over-cautious physician does little to help. The existence or threat of legal litigation, either in workmen's compensation, negligence actions, or in relation to insurance benefits are infrequently results in unduly prolonged periods of idleness.

For the cardiac who wants to work, the outlook today is far brighter than it was a decade ago. Strong evidence is now available that most persons with heart disease who are intelligently placed and who remain under medical supervision can look forward to many years of gainful employment. The outlook for them is certainly no worse, and is probably better than it would be if employment were to be terminated.

Goldwater, L. J., *J. Maine M. A.*, 50:78-80,1959.

Chlormerodrin in Congestive Heart Failure

An oral organomercurial which, administered frequently in small doses, will provide continuous diuresis, is available as Chlormerodrin, a non-ionic crystalline compound.

During a period of 4 years, 48 patients in chronic congesitve heart failure have been maintained in fluid balance with the use of chlormerodrin, maintenance digitalis, and low-salt diet. Five additional patients developed gastrointestinal symptoms and could not tolerate the drug, regardless of rest periods or reduced dosage. Initially the patients were class II to class IV. Those in class IV were reduced to class II or III by active treatment with parenteral meralluride, before changing to the oral regimen with chlormerodrin. Continuance of the improved cardiac function was dependent on continued diuretic therapy. Most of the patients had received a parenteral diuretic for several years before the change to chlormerodrin was made.

Of the 48 patients, 43 were kept free from any signs or symptoms of congestive failure, and required no parenteral mercurials. Five required injections of meralluride in addition to the daily chlormerodrin for weeks, then did well for three to seven months before again requiring additional meralluride. Three patients developed diarrhea taking four tablets daily, were kept off the drug for two weeks, and then resumed, taking one tablet a day for a week increasing the dose each week until three tablets a day were being taken after meals. None developed any symptom of mercurialism, or reactions ascribable to hypersensitivity to mercurials. Once the dry-weight level was achieved with parenteral meralluride, the see-saw of accumulation and dehydration was rarely seen. The steady diuretic effect of chlormerodrin was in sharp contrast to the intermittent diuretic effect of periodic injections.

Effectiveness in the older patients was striking. It is obvious that men and women in myocardial failure are now living much longer, owing to more accurate diagnosis, newer glycosides, sodium-restricted diets, and the use of effective non-toxic organomercurials. In none of the 48 was there clinical or laboratory evidence of renal impairment due to mercurials given over the entire 4-year period. Eight deaths occurred among the 48 patients, none of which was related to mercury.

Leff, W. A., & Nussbaum, H. E., *Brit. M.J.*, 1:885-889,1959.

Digitalis and Atrial Tachycardia With Block

There is as yet little appreciation of the digitalis-induced atrial arrhythmias, disorders which generally represent far advanced intoxication. It is currently taught that digitalis is the drug of choice in the treatment of supraventricular tachycardias. Its use to combat digitalis-induced atrial tachycardia is hazardous.

During 1957, 8,096 electrocardiograms were recorded at a large hospital, and 32 episodes of paroxysmal atrial tachycardia with block were diagnosed in 23 patients. The criteria for the diagnosis were: Atrial rate 150 to 200; change in the morphology of the *P* wave; isoelectric baseline between consecutive complexes in all leads, and the presence of atrioventricular block (either spontaneous

the Treatment of Rheumatic Disorders
eater stability of maintenance dosage
nimizes risks of hormonal imbalance

terazolidin, the anti-inflammatory actions of prednisone and Butazolidin* combined to permit lower effective dosage of each. Clinical experience indicated that patients can be well maintained on this combination over onged periods with relatively low, stable dosage levels of each component, minimizing the problems arising from excessively high doses of corti-teroids. Other side effects have also been gratifyingly few. Antacid and molytic components are contained in Sterazolidin capsules for the benefit atients with gastric sensitivity.

azolidin®: Each capsule contains prednisone 1.25 mg.; phenylbutazone mg.; dried aluminum hydroxide gel 100 mg.; magnesium trisilicate 150 mg.; atropine methylbromide 1.25 mg.

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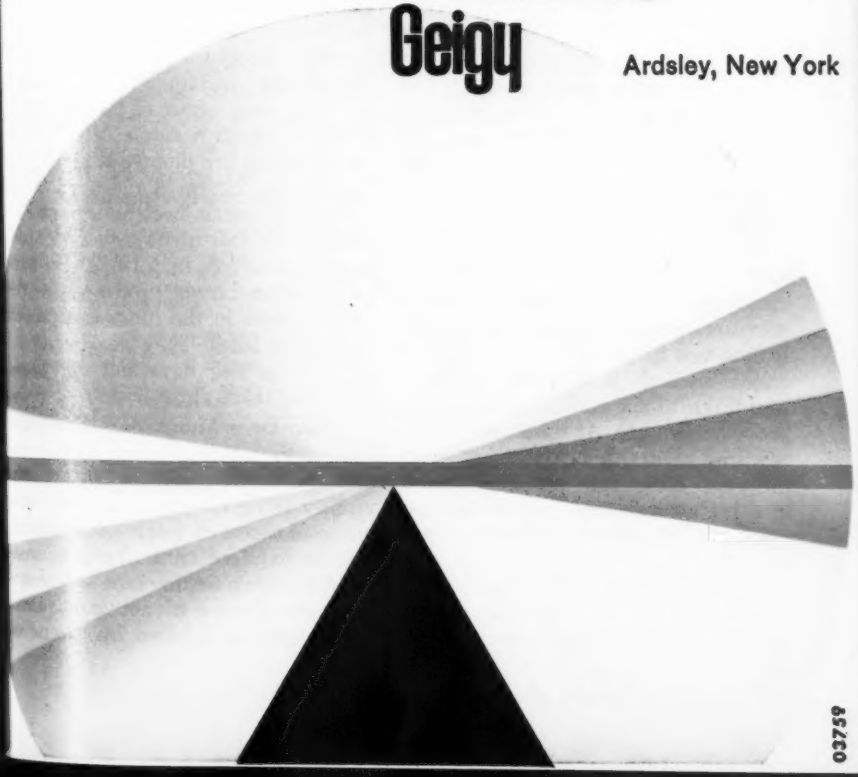

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or induced by carotid-sinus pressure or other vagal maneuvers).

Digitalis was considered to be the cause if the arrhythmia:

1. Developed during digitalization or after an increase in maintenance dosage and was abolished by discontinuance of the drug.

2. Occurred in a digitalized patient immediately after mercurial-induced diuresis with a weight loss of 1 kg.

3. Appeared after an event known to enhance digitalis effect, such as potassium loss induced by severe vomiting, diarrhea or hemodialysis, or if subjective and objective signs of digitalis overdosage appeared with the onset of paroxysmal atrial tachycardia with block and disappeared when the drug was discontinued.

In four of the 24 episodes due to digitalis overdosage, the discontinuance of digitalis and of diuretic measures restored a normal mechanism. In two patients digitalis was continued; both died. Of the remaining 18, five episodes were controlled by the oral or intravenous use of potassium, 10 by the combined use of potassium and procaine amide, three by procaine amide alone.

It appears mandatory to stop digitalis and diuretics until a normal mechanism is established. No other measures may be necessary. Generally, the use of potassium or procaine amide or both is indicated. Potassium, three to six gm. of the chloride, proved adequate. At times, reversion required several hours, during which the ventricular rate remained rapid in a 1:1 atrioventricular-response phase. Procaine amide was used alone in the presence of serious renal disease, with potassium when heart failure was severe, or when it appeared that a prolonged rapid ventricular rate might jeopardize survival.

Eight of the 17 patients who had paroxysmal atrial tachycardia with block due to digitalis died. In only one case was there electrocardiographic evidence that digitalis was responsible for death. In two others, digitalis intoxication may have contributed to death.

Atrial arrhythmias due to digitalis are occurring with increasing frequency. The common pattern assumed electrocardiographically is that of atrial tachycardia with block.

Lowin, B., et al., *New England J. Med.*, 260:301-309,1959.

Vaccine Against Worm

Parasitic bronchitis in young cattle is a widespread disease causing serious morbidity and mortality in Great Britain and other countries with a temperate climate. The causal organism, Dictyocaulus viviparus, a thread-like nematode four to eight cm. long, may occur in the thousands in the lungs of a single calf in a locality where the disease is highly endemic. No intermediate host is required and cattle become infected by swallowing infective larvae on pasture land which, in turn, is contaminated when larvae produced by the adult worms in the lungs are passed out in the feces. They develop to infectivity in four days and the whole life cycle takes three weeks.

It has been known for some time that cattle which recover from parasitic bronchitis have a strong immunity to reinfection, and recently a group of research workers detected a passive acquired immunity in animals given immune serum intraperitoneally. Some degree of active acquired immunity was induced by means of

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pheniramine maleate	12.5 mg.
pyrilamine maleate	12.5 mg.)
Dormethan (brand of dextromethorphan HBr)	30 mg.
Terpin hydrate	180 mg.
APAP (N-acetyl-p-aminophenol)	325 mg.

References: 1. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

Controls cough centrally
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Liquefies tenacious mucus
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Dosage: One tablet in the morning, midafternoon and at bedtime. Pediatric dosage chart for Tussagesic Suspension available on request.

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a whole-worm vaccine given intramuscularly. Later success resulted from the use of a vaccine consisting of living but attenuated by irridation with x-rays infective larvae given orally, a method which gave a high degree of protection.

The results have encouraged one group to explore the use of larval vaccines in other kinds of helminth infections, and already brief accounts have appeared reporting the success of vaccination of dogs, against the canine hookworm Uncinaria stenocephala, and of calves against the nematode Haemonchus contortus. Also under investigation are important helminth parasites such as Fasciola species, Cysticercus bovis, Ascaris lumbricoides, Metastrongylus apri, Dictyocaulus filaria, Nematodirus species, and hookworms.

Annotation, *Brit. M.J.*, 1:637,1959.

Allergic Reactions Following Insect Bites and Stings

Insect stings and bites are not to be taken lightly: The hypersensitive reaction follows repeated stings and develops the allergic reaction ranging from severe local swellings to systemic reactions, even death. When a honey bee stings, its stinger and the venom sac are left at the sting site; the quicker the venom sac is removed, the less venom is injected. Hornets, yellow jackets, bumble bees and wasps can sting repeatedly.

Of 18 cases hyposensitized in one series, 12 (66%) have been subsequently stung or bitten and have had only local reactions. All patients who have systemic or severe local reactions should be considered for hyposensitization with insect antigens.

Treatment consists of:

1. *Local*—sodium bicarbonate or ammonia to the site and soaks in a basin of ice and water, or cold wet cloths.

2. *Systemic*—*a.* Tourniquet applied proximal to the areas bitten or stung (have two large tourniquets long enough to go around the thigh). *b.* Epinephrine hydrochloride aqueous (1/1,000) 0.2 cc., repeated at 3 to 15 minute intervals if necessary for several doses. *c.* Dimetane, 4 mg. (or some comparable antihistamine)—two tablets orally immediately on being stung. *d.* Amodrine tablets—one orally as often as every 30 minutes to an hour for two or three doses for swelling or tightness in the chest. *e.* Dimetane injectable 10 to 20 mg. (1 cc. ampule contains 10 mg.) intramuscularly and repeated if necessary, on physicians order. *f.* Meticortelone, 5 mg., three tablets by mouth in the event of a sting, or Solu-Cortef 2 cc., intramuscularly or intravenously depending upon the symptoms. *g.* In the event of shock, the patient should be stretched out, covered with a blanket, and the pulse checked. *h. Isuprel* tablets, 10 mg., one under tongue for rapid adrenalin type of response.

Emergency instructions and kit should be kept available for those patients subject to severe reactions following insect stings or bites. Hypodermic administration of drugs may save life.

To determine the insect responsible in any case, the patient should be tested with a representative group of insects such as bees, wasps, yellow jackets, hornets, ants and mosquitoes. Severe reactions may follow sensitivity studies: these patients should remain under observation for at least an hour following test procedures.

Thomas, J. W., *West Virginia M.J.*, 55:115-121,1959.

A Quarter Century of Anemia Caused by A Leiomyoma of the Small Bowel

Six months ago a lady came for a thorough examination. At 56, she could not recall ever feeling strong, had been under casual medical care over half of her life and had taken iron until she thought black was the normal color for a stool. She had not had a blood count in 15 years. Positive findings were extreme pallor of the mucous membranes and a severe hypochromic, microcytic anemia. Cancer was feared, since three siblings had died in middle age from this disease. A complete gastrointestinal x-ray was uninformative.

She had borne three children, now adult. Her menstrual blood loss had been so great that 20 years ago she had submitted to a radiologically induced menopause. On intramuscular injections of saccharated iron, stools became a normal brown, hemoglobin increased from seven to 15 gm. in one month and her strength improved. Then she experienced a day of nausea with frequent tarry stools and the blood count dropped to its previous low figure. She was hospitalized, but the site of bleeding was not found. Exploratory laparotomy was advised and refused. On discharge, intramuscular iron again quickly renewed her strength and red cells, only to be cancelled by another attack of nausea with tarry stools, coffee-grounds emesis, and shock. Emergency hospitalization and 2500 cc. of blood brought her red count and strength back to normal. Massive estrogenic therapy was given for a period of one month during which she happily noted that she never felt better in her life.

Another attack occurred with a quiet abdomen, tenderness, but no rigidity low in the right quadrant. Rebound tenderness was marked. The red cells had returned to their former level, white cells 7,000, with a marked shift to the left. Immediate surgery was advised but consent was not obtained for six hours. At operation a tumor at the junction of the jejunum and ileum was removed and leiomyoma of the small intestine was diagnosed by the pathologist.

Four months later this patient had recovered her strength and had maintained a normal blood count without medication. Then several loose tarry stools were passed and she vomited, first coffee-grounds, then red blood. She was again hospitalized and a small crater was found in the distal duodenal bulb. Routine ulcer treatment was maintained and a daily intramuscular dose of saccharated iron given during two weeks in the hospital. There has been no further bleeding. The blood count has remained normal for three months with no antianemia therapy.

It is impossible to determine the duration of this ulcer. Repeated histories failed to reveal ulcer symptoms prior to a few days before the last hemorrhage.

Owen, A. M., & Holland, P. T., *J. Indiana M.A.*, 52:510-512,1959.

Pseudo-Pseudo-Hypoparathyroidism

A familial metabolic disorder characterized by clinical and biochemical signs suggestive of hypoparathyroidism, along with a number of physical defects including short stature, broad face, poor mental development, short metatarsals and metacarpals, and ectopic calcification was described in 1942. Intravenous administration of parathyroid hormone failed to pro-

duce the expected phosphate diuresis, and normal or hypertrophied parathyroid glands were noted. This was considered to represent a failure of end-organ response, and the polysyllabic term, pseudo-hypoparathyroidism, was coined. A patient manifesting all the physical characteristics of pseudo-hypoparathyroidism but had normal serum calcium and phosphorus levels was reported in 1952. The term pseudo-pseudo-hypoparathyroidism was suggested for this entity, and since the original description six cases have been reported.

One case was complicated by obesity and alveolar hypoventilation.

The round face, short obese stature, mental dullness, short metatarsals and metacarpals, and normal calcium and phosphorus supported the diagnosis of pseudo-pseudo-hypoparathyroidism. There was no calcification of the basal ganglia, but ectopic ossification was a feature. Lenticular opacities and the diffuse, low-voltage electroencephalogram are other features previously described. Response to parathyroid hormone was not determined since the levels of calcium and phosphorus suggested normal parathyroid function. The low-voltage electroencephalogram should perhaps not be attributed to this syndrome.

The possibility of alveolar hypoventilation with obesity was considered when deep cyanosis and twitching in sleep were noted. When first admitted she slept almost constantly, was startled when aroused, and took several quick breaths which improved her color. Hypoventilation and secondary polycythemia were manifest. It was not possible to repeat the studies after a 20 lb. weight loss, but the clinical improvement indicates the possible association, in her case, of excessive weight and altered arterial blood gases. The symptoms resulting from alveolar hypoventilation led to the hospital admission.

The syndrome of pseudo-hypoparathyroidism consists of several unrelated genetic defects which occur simultaneously.

Casey, T. R., et al., *J.A.M.A.*, 169:1988-1990, 1959.

Skin Infections: Prevention and Control in Newborn Infants

Since dermal pathogens can reach the infant via air and dust as well as by handlers, it is practical to place greatest emphasis for prophylaxis on creating a barrier on the skin. For this purpose a synthetic sudsing skin detergent (pHisoHex) was selected as a germicidal agent for bathing 203 newborn infants during a period of 12 months. The detergent preparation contains sodium octylphenoxyethoxyethyl ether sulfonate, lanolin cholesterols, petrolatum, and 3 per cent hexachlorophene. The bathing procedure is repeated every second day. After wetting her hands, the nurse works a teaspoonful of pHisoHex into a lather and applies it to all parts of the baby's body including the head, taking care to avoid getting any in the eyes. All creases and folds are carefully cleansed, the diaper area being washed last. For additional lather, more water is added rather than more detergent. All lather is removed and the baby patted dry with a soft towel.

Prior to institution of the routine pHisoHex baths, lotion baths were usually given. The incidence of skin infections occurring in the infant bathed with this method for a period of five years is estimated at 25 per

ent. These infections included impetigo, cradle cap, diaper rash and those caused by staphylococci. On the HisoHex bath regimen, none of the 83 babies showed evidence of any of these infections. A minor rash was observed in a few of the babies, but cleared routinely without discontinuing the baths. Senistivity reactions were not observed.

Kum, A. H & Doles, B., *J. Kansas M. Soc.*, 60:248-250,1959.

The Low Salt Syndrome in Congestive Heart Failure

Restriction of dietary sodium has come to be accepted generally as a major feature of the management of congestive heart failure. Following a period of rigorous salt restriction, with the use of powerful diuretics, initial improvement in some cases has been followed by relapse manifested by muscular weakness, apathy, a rising blood urea nitrogen, and a decreased serum sodium. Improvement often was noted when sodium intake by mouth was increased, or sodium salts were given by vein.

The term, low salt syndrome, is a misnomer in that it connotes an actual delpetion of body sodium stores. Giving sodium salts to patients with a low sodium in congestive failure frequently fails to alter the serum sodium level and sometimes causes the patient's death. The level of the serum sodium does not necessarily reflect the total quantity of sodium in the body.

In considering factors producing heart failure, many mechanisms have been proposed; in all there is a marked reduction in urinary sodium output. These mechanisms appear to be actuated through increased aldosterone production or through stimuli that increase aldosterone formation. The result is that urinary sodium output frequently approaches zero. One of the most powerful stimuli to aldosterone production is dietary sodium restriction. Mercurials, carbonic anhydrase inhibitors, and chlorothiazide-like compounds will produce sodium diuresis. However, this is self-limiting and tends to be transitory, and so sodium depletion via the renal route is not likely to occur in congestive heart failure. But it may occur through extrarenal routes as with diarrhea, vomiting, and biliary fistula, or via the kidneys in the presence of ardenal insufficiency or advanced renal disease.

A marked elevation of the serum lipid content acts to displace serum water and leads to an apparent decrease in serum sodium concentration which is asymptomatic. A primary water excess may develop in the presence of heart failure because of water loading, or the heightened activity of the posterior pituitary antidiuretic hormone. Rational therapy in this situation is restriction of intake of water. If the underlying disease process improves, the serum sodium rises spontaneously.

In the course of congestive heart failure, cellular osmolarity may become decreased as a result of K loss, reflected in the extracellular fluid by a decreased sodium concentration. Depletion of K may follow the use of diuretics, the kaliuretic effects of aldosterone-like compounds, and inadequate dietary intake. The administration of K salts may repair this deficit and porduce clinical improvement. In other cases, the ability of the cells to take up K is deficient and therapy with K results in hyperkalemia with its attendant toxic effects.

Talso, P. J., *Illinois M.J.*, 115:348-349,1959.

Rapid Destruction of Apparently Compatible Red Cells

As serological tests have improved, it has become progressively easier to avoid the transfusion of incompatible blood. The case reported here is remarkable in that transfusions of red cells which seemed to be perfectly compatible, judged by tests in vitro, were repeatedly followed by severe reactions, with hemoglobinuria.

A married woman, aged 46, was found in 1955 to have reticulum-cell sarcoma. In 1956 she received deep x-ray therapy. During the course of treatment her hemoglobin dropped from 84% to 44%. She was given several blood transfusions, but these were "not tolerated." In May, 1957, a transfusion of two pints of blood produced only a transient increase in hemoglobin. In June she was severely anemic, had petechial hemorrhages and was bleeding from the gums. A transfusion with blood compatible by the indirect Coombs test and the albumin technique was started, stopped at 350 ml. because of fever and hemoglobinuria. Treatment with prednisone, 5 mg. 4 times a day, was then begun. Five days later (June 7), a transfusion of red cells, labeled with ^{51}Cr and washed three times in saline, was given. After receiving half of this over the course of several hours, she felt ill and the transfusion had to be stopped. The urine passed shortly after contained hemoglobin. A blood sample showed that most of the injected cells had already been lost. On June 14 the prednisone was increased to 25 mg. 4 times a day. On July 5 the hemoglobin was 4.8 gm./% and the patient now improved rapidly. July 25 the hemoglobin had risen to 9.3 gm./% with a platelet count of 187,000/c.mm. The patient was discharged from hospital on a reduced dosage of prednisone (15 mg. 3 times a day). When seen in the outpatient department in September her hemoglobin had risen to 12.2 gm./%, white cell count to 7,800 c.mm. She died suddenly at home in December, 1957.

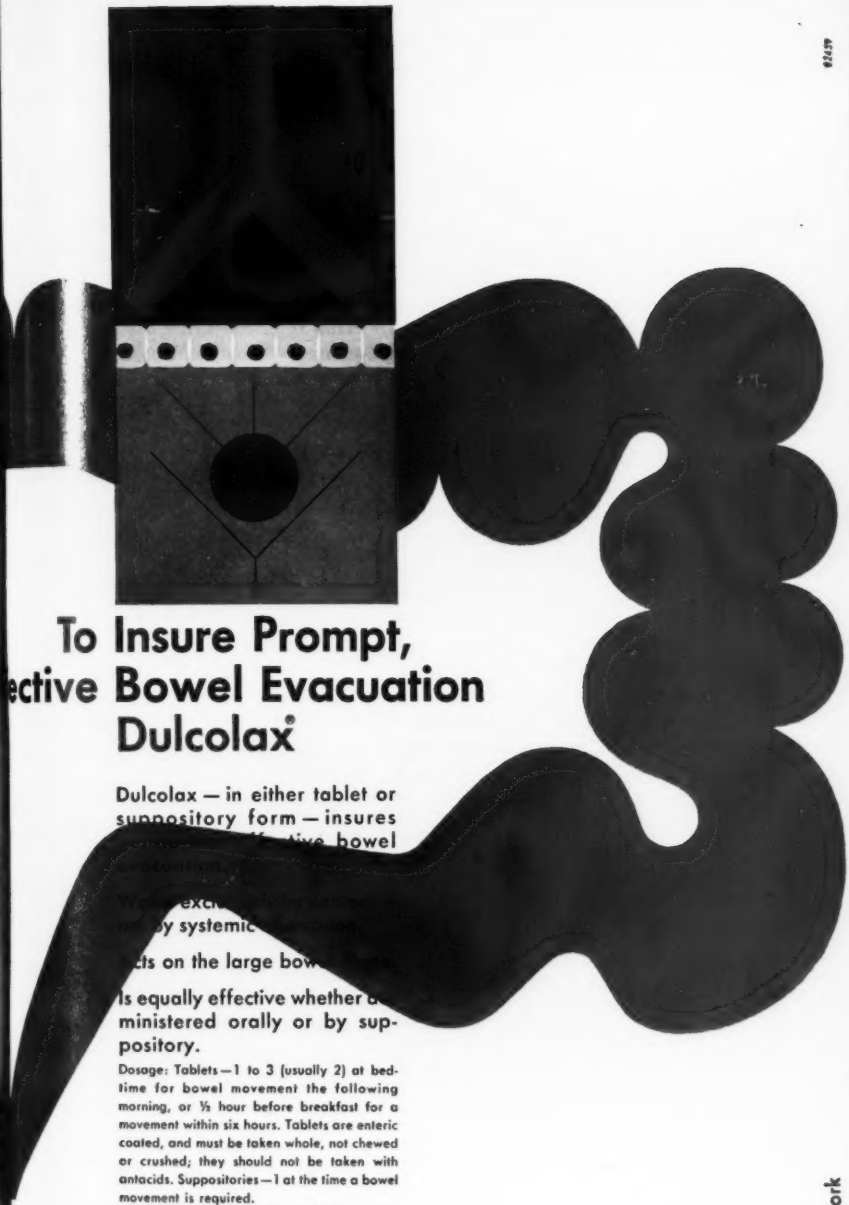
This patient repeatedly suffered severe hemolytic reactions after the transfusion of apparently compatible blood. It was demonstrated that the transfused red cells were completely lost from the circulation within 24 hours of the transfusion, but all known tests for blood-group antibodies failed to reveal any incompatibility *in vitro*.

Stewart, J. W., & Mollison, P. L., *Brit. M.J.*, 1:1274-1275,1959.

Isoxsuprine Hydrochloride: A New Vasodilating and Antispasmodic Agent

Symptoms of arterial insufficiency associated with peripheral arterial disease, cerebral vascular insufficiency, and uterine disorders characterized by hypermotility (primary dysmenorrhea with cramping, threatened abortion, premature labor, and uterine tetany), were effectively controlled with isoxsuprine hydrochloride (Vasodilan) in clinical trials involving 386 patients. In addition to its effectiveness in the management of these symptoms, the drug may be of value in the prevention of vascular insufficiency especially in elderly diabetic patients, and in the treatment of some types of deafness, vertigo, tinnitus, and vascular disturbances of the middle ear.

An important therapeutic advantage of isoxsuprine is that it is almost entirely free from serious side reactions in effective therapeutic dosage. The only side reaction noted in



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Dosage: Tablets—1 to 3 (usually 2) at bedtime for bowel movement the following morning, or ½ hour before breakfast for a movement within six hours. Tablets are enteric coated, and must be taken whole, not chewed or crushed; they should not be taken with antacids. Suppositories—1 at the time a bowel movement is required.

Supplied: Dulcolax® (brand of bisacodyl). Yellow enteric-coated tablets of 5 mg. in boxes of 6 and bottles of 100. Suppositories of 10 mg. in boxes of 6. Under license from C. H. Boehringer Sohn, Ingelheim.

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the trials were dizziness and palpitation, these usually being mild, transient, and easily controlled by adjusting dosage. Since the drug is not ganglioplegic it is less likely to cause postural alterations in hemodynamics than do some other ganglionic blocking agents.

Intramuscular dosage is 5 to 10 mg. (1 to 2 ml) two or three times daily for the treatment of peripheral and cerebral vascular disorders, and oral dosage 10 to 20 mg. (one to two tablets) three or four times daily for the treatment of peripheral and cerebral vascular disorders and for dysmenorrhea. Oral administration should be instituted as soon as severe symptoms are controlled by parenteral administration. For dysmenorrhea, oral therapy is instituted one to three days before onset of menstruation and continued until pain has been averted. Intravenous administration should not be necessary in the majority of patients and is not recommended. There are no contraindications if dosage is kept within the prescribed limits.

Kaindl, F., et al., *Angiol.*, 10:185-192,1959.

Artificial Kidney in Acute Renal Failure

The mortality rate in post-surgical renal shutdown has been lowered from 80% to 50%. In 1953, one group of researchers presented an analysis of kidney shutdown mortality at 74% of 62 cases. In 1956 this same group treated 62 cases of obstetrical shutdown with the liberal use of the artificial kidney and the mortality rate was 8%.

Critical review of experience with acute renal failure since 1954 suggests that earlier and more frequent dialysis and improved other care would have resulted in lower mortality figures. Prevention, rather than treatment of uremia and its complications, is based on early and frequent hemodialyses and a carefully integrated plan of supportive care designed to cope simultaneously with the many problems presented by most patients with acute renal failure. This regimen is best carried out in a center which has available the necessary dilysis team facilities, and consulting services. Early diagnosis and proper early conservative therapy are essential in minimizing the need for artificial hemodialysis, and making it most effective to those who require it. The ability of physicians to predict that hemodialysis will be needed is essential if patients are to be dialyzed in time to be protected against uremia and its complications. Dialysis will probably be required eventually in any case of persistent urine volume below 400 ml./24 hours in which *any* of the following points obtain:

1. BUN above 100 mg. per 100 ml. before the urine volume exceeds 500 ml./24 hours.

2. Oliguria (vol. less than 400 ml./24 hours) that persists longer than 3 days.

3. Rising serum potassium level or a level above 6 mEq./L.

4. Persistent fever or infection.

5. Large hematomas or areas of traumatized tissue that cannot be removed.

6. Any sign of deterioration in the patient's sensorium or ability to cough, even though the urine volume has risen above 400 ml./24 hours.

Scribner, B. H., *Northwest Med.*, 58:555-559,1959.

Comparison of Demerol, Nembutal, and Benadryl with Atropine or Scopolamine for Preoperative Medication

This investigation employed a double-blind technic. The three drugs, each in a concentration of 50 mg. per cc., and a placebo (saline), were coded by a member of the staff who neither administered premedication or anesthesia nor ascertained the effects. The coding was changed weekly. Residents of the department had free choice in selecting any coded vial for their patients. Unselected good risk patients between the ages of 15 and 50 years were included in the study. The medication was administered by intramuscular injection 30 to 90 minutes before induction of anesthesia. Two hundred patients were studied for each drug and the placebo. Scopolamine, although weaker than atropine as a cardiovagal blocking agent, enhances sedation and retrograde amnesia and inhibits secretions to a greater degree than atropine. Scopolamine, therefore, is more desirable as a preoperative medication except when cardiovagal blockade is of importance, or when the central nervous system depression might develop into a state of confusion. Demerol, combined with atropine, produced about the same degree of sedation and amnesia as either Benadryl or Nembutal with atropine. Excitement and secretions were encountered less frequently and to a lesser degree than with the latter two drugs. When combined with scopolamine, Demerol led to superior results in every respect, with the small dose of 50 mg. The heightening of results was so spectacular that one could suspect a synergistic action between Demerol and scopolamine. Demerol administration was followed by higher pulse rates and lower respiratory rates than found with the other drugs. The respiratory rate alone does not give an accurate picture of ventilatory depression. The dose of 50 mg. of Demerol, which produced very desirable results as preoperative medication, was not followed by a respiratory rate below 14 per minute. The finding that the older patient tends to remain "normal" confirms the impression that the older person is more serene, and presents less psychic problems, than the young adult.

Conclusions drawn from this study: Scopolamine is a better drug than atropine in relation to sedation, amnesia, and ease of induction. Benadryl is commendable as medication when antihistaminic action and inhibition of secretions are important. The optimal dose is 100 mg. The effects of Nembutal are proportional to the dose. The combination of Demerol and scopolamine produces the most desirable results, even in a dose as small as 50 mg. A time span of 30 to

90 minutes between intramuscular administration of medication and induction into anesthesia is advisable. The older patient tends to remain normal after receiving preoperative medication, whereas the younger patient is inclined to become either sleepy or apprehensive. .

Marx, G. F., & Orkin, L. R., *New York J. Med.*, 59:78-85,1959.

Candida Albicans Peritonitis Successfully Treated with Amphotericin B

Increased morbidity and mortality from fungus infections after broad-spectrum antimicrobial therapy have occurred throughout the world. The new antifungal agent, amphotericin B, has been used effectively. This drug is a conjugated haptene extracted from cultures of a South American strain of streptomycetacea. The drug is effective orally and parenterally, but low blood concentrations have attended its oral administration. Oral doses of 0.2 to 4.0 gm. daily have been used without complications. Intravenously, 0.5 to 1.0 mg. per Kg. of body weight produced fungistatic blood levels 20 hours after infusion.

A farmer of 60 was admitted to hospital with a 20-year history of epigastric pain concurrent with alcoholism. X-ray examination had shown a duodenal ulcer 5 years previously. Hematemesis and melena occurred 18 months and again 3 weeks before admission, when a duodenal ulcer, gallstone, hiatus hernia, and obstruction of the lower esophagus were demonstrated by x-rays. A stellate scar at the gastro-esophageal junction was seen during esophagoscopy. Signs of esophageal perforation developed several hours later. As an emergency procedure, the stenotic cardiac junction was excised, and a jejunal segment interposed between the lower esophagus and distal stomach. A vagotomy, Finney pyloroplasty and feeding jejunostomy were performed.

Because of extensive mediastinal contamination 5,000,000 units of aqueous penicillin was given intramuscularly, followed by 1,000,000 units every 4 hours, 0.5 gm. of streptomycin every 12 hours, and 250 mg. of tetracycline intravenously every 6 hours. On the 7th postoperative day temperature was 105.3°, signs of acute peritonitis evident. At operation, 800 ml. of serosanguineous free intraperitoneal fluid was removed. Many plaques, 1 to 5 mm., were on the bowel serosa. Budding yeast cells were seen in direct smears of the plaques, but no bacteria. The sutures lines were intact. Cultures of the peritoneal fluid produced a heavy growth of C. albicans. Penicillin, streptomycin and tetracycline were discontinued, and 130 mg. of amphotericin B introduced every 8 hours through the jejunostomy tube. The patient remained afebrile for 4 days.

One week later, a fecal fistula with abscess required drainage. The amphotericin B was discontinued after this operation. No fungus was grown from the 6 abdominal wound cultures obtained at intervals during the next month. The intra-abdominal abscess produced repeated cultures of Aerobacter aerogenes, coliform organisms and white staphylococci, but no fungi. One month after discharge, transient icterus, attributed to serum hepatitis, developed. The patient is now actively farming and feeling well, nine months after the original operation.

Ohlwiler, D. A., & Bricker, E. M., *New England J. Med.*, 260:488-489,1959.

The Physiologic Basis for Peptic Ulcer Surgery

The stomach of the patient with duodenal ulcer is hypermotile with rapid emptying and frequent deep waves of peristaltic contractions. The stomach ulcer has diminished secretion and motility, fewer contractions, and prolonged retention of either barium or food materials. From the physiologist's point of view, surgical therapy of duodenal ulcer should be designed in the light of the old dictum, "no acid, no ulcer." Acid need be only reduced to a point where the "normal" neutralizing mechanisms can handle it adequately; this by either reducing the stimuli to the oversecreting gastric mucosa, or drastically reducing the actual amount of acid-secreting tissue. The nervous phase of gastric secretion is the phase which is greatly exaggerated in patients with duodenal ulcer. Therefore, division of the vagi can be expected to reduce drastically the secretion of hydrochloric acid. Surgical experience has borne this out.

Contrary to widely held opinion, vagotomy is permanent in 80% of human subjects upon whom it is performed. Likewise, study in large groups of patients has indicated that properly performed ancillary drainage procedures will completely obviate the motility disturbances following vagotomy. Conservative gastric resection (antrectomy) is curative even though the ulcer is not removed. The Billroth I reconstruction is preferred in such cases as being sounder surgically and physiologically, and the ulcer recurrence rate is low. Control of the hypersecretion of acid gastric juice with duodenal ulcer is singled out as the objective of surgical treatment. This can be accomplished by reducing stimulation through vagatomy and possibly the addition of antrum resection, or by the moderately extensive removal of acid-secreting gastric mucosa through partial gastrectomy.

Simple gastroenterostomy can be life-saving in obstructing duodenal ulcer.

Woodward, E. R., *J. Florida M.A.*, 45:1137-1143, 1959.

Surgical Emergencies

Circumstances which call for immediate action include severe uncontrolled hemorrhage, inadequate pulmonary ventilation, cardiac arrest and shock. On occasion, bleeding from vessels at the base of the neck can be temporarily controlled by digital compression.

In hemorrhage from vascular injuries of the extremities, digital compression and use of a tourniquet serve. Some vessels may be repaired primarily; others require one of the many available grafting technics to afford physiological continuity of blood flow.

Intraperitoneal hemorrhage may result either from penetrating wounds, or from blunt force without penetration of the abdominal wall. Institution of gastric suction, bladder catheterization and parenteral fluid therapy, and administration of whole blood and other urgent measures are important, but the completely divided spleen, the lacerated liver, or the injured superior mesenteric artery has primacy. The best treatment of postoperative hemorrhage is prevention. Other than hemorrhage following bladder and prostatic operations and nasal operations and tonsillectomy, this complication most frequently is seen following thyroidec-

tomy, gastric and gastroduodenal procedures.

The application of external heat usually is harmful, but conservation of abnormal body heat is helpful. Drugs should not be given in shock except for the control of pain, then half of the ordinary dose, intravenously. Maintenance of an adequate airway for unrestricted inhalation of air is mandatory. Elevation of the foot of the bed is useful temporarily. Much lowering of the head has distinct disadvantages.

Other circumstances in which emergency surgical treatment is required are wound disruption, acute gastric dilation, and potential "space" infections. Malnourished patients, particularly those with carcinoma, should have through-and-through wire closure. In wound disruption secondary closure should be carried out as soon as possible. For acute gastric dilation continuous gastric suction is the standard treatment.

"Space" infections, even about the hand and the anorectal regions, must be incised and drained as soon as the diagnosis is made.

Siler, V. E., *West Virginia M.J.*, 55:187-191,1959.

Recurrent Gallstone Ileus

Impacted gallstone is the cause of 0.4% to 3.5% of all cases of intestinal obstruction. Recurrent gallstone ileus requiring repeated ileotomy is even more rare.

A man of 47 entered the hospital with a 3-day history of mid-abdominal crampy pain, nausea, vomiting and distention. Two years previously the diagnosis of metastatic seminoma was made on the basis of a left supraclavicular lymph-node biopsy. The primary lesion was presumed to be in a left undescended testicle. Since that time the patient has had several courses of x-ray therapy to his neck and groin. The abdomen was distended, peristaltic waves noted. There was a 3x3", soft mass in the region of the left inguinal canal. Only the right testicle was palpable in the scrotum. Peristaltic sounds were exaggerated with frequent rushes noted. Routine blood and urine studies were unremarkable. A Miller-Abbott intestinal tube would proceed no further distally than the mid-ileum.

On the 5th day exploration revealed, three feet proximal to the ileocecal valve, a gallstone 2x1x1", obstructing the ileum. An ileotomy was done and the stone removed. A firm inflammatory mass was palpated in the right upper quadrant of the abdomen. The left undescended testicle was removed. There was no evidence of seminoma anywhere in the abdomen. After an uneventful course for 7 days, symptoms of obstruction recurred. A Miller-Abbott tube again proceded down to the mid-ileum. At this time a small amount of diodrast was injected through the tube and demonstrated another gallstone obstructing the ileum. A 2nd coeliotomy was done and a 2nd large gallstone removed from the ileum one foot proximal to the first. A wound abscess which drained and then healed. A week after his 2nd operation symptoms and signs of small intestinal obstruction recurred. This time the obstruction was relieved by the tube. The patient was finally discharged on his 50th hospital day.

He reutrned five months later in excellent general physical condition at which time an elective cholecystectomy was carried out.

Ratner, I. A., *J. Maine M.A.*, 50:170-171,1959.

Leuko-Erythroblastic Anemia in Breast Cancer Treated by Hypophysectomy

Of 42 patients with metastatic cancer of the breast, on whom hypophysectomy was done because other forms of therapy had proved refractory, leuko-erythroblastic anemia was discovered in 8 before the operation, and in 7 of these the results of the hypophysectomy could be followed up for 19 months to 5 years. In 7 patients who had sternal puncture, cancer cells were found. No clear signs of hemolysis were revealed by ordinary tests. The blood returned to normal after the operation in 3 of the 7, obvious remission of the blood condition was observed in another 3. In one patient whose blood picture improved, the disease apparently attacked the liver and resulted fatally. The operation was dramatically successful in the case of one patient in an apparently hopeless situation. It is suggested that in cases of mammary cancer metastases in the bone marrow, with resultant leuko-erythroblastic anemia, remission may be brought about by hypophysectomy, when other types of treatment, including endocrine therapy, have failed.

Hartling, H., et al., *Acta med. scandinav.*, 162-387-396,1958.

Desmoid Tumors in Familial Multiple Polyposis

Attention was first called to a familial syndrome consisting of the triad of multiple polyposis of the colon, multiple osteomatosis, and multiple soft-tissue tumors of the body surface in 1951.

Although there is good reason to believe that trauma and hormones may play a role in the cause of these tumors, neither theory has any conclusive evidence supporting it. A nodule in an incisional scar in a patient with multiple polyposis may well be a fibroma or a desmoid, not an implant of carcinoma. Fibromas, desmoid tumors, fibrosarcomas, and osteomas occur in unusually high incidence in patients with multiple polyposis of the colon. Of most frequent occurrence, and of greatest clinical significance, are desmoid tumors. Although desmoids seem to develop most commonly in association with incisional scars on the abdomen, they may also arise *de novo* from extra-abdominal sites. A new syndrome recently described consists of the combination of familial multiple polyposis, multiple osteomatosis, and multiple epidermoid cysts. Are desmoid tumors hereditary? Any nodule on the body surface of a patient with multiple polyposis should be viewed with suspicion. A nodule in an incisional scar in a patient whose colon has been removed because of multiple polyposis is not necessarily an implant of carcinoma. Patients in whom desmoid tumors develop should have periodic examination of the colon for polyps.

Smith, W. G., *Proc. Staff Meet. Mayo Clin.*, 34:31-38,1959.

Bladder Care After Gynecological Surgery

A delay of one or two hours in catheterizing may result in more pain and a longer hospital stay. A balloon retention catheter is used routinely on patients who have had vaginal hysterectomy with or without rectocele repair, vaginal hysterectomy with cystocele and rectocele repair, cystocele repair only, or abdominal hysterectomy. When the patient can go to the bathroom with minimal help

the catheter is removed. After cystocele repair alone or with rectocele and vaginal hysterectomy. A Foley catheter, 20 to 22 French, is retained for seven days, irrigated three times daily, and clamped off for brief intervals, such as while bathing. If it comes out it is replaced immediately. Many patients complain that the catheter is painful. The pain is due to the operative procedure. Sedation is used liberally. Feeling of fullness and urge to void may mean the catheter is not draining.

Three ounces of Acriflavine 1:5000 are injected and allowed to flow out, repeated until the return is clear. Gantrisin, 0.5 gm, four times daily, is given as long as the catheter is kept in. Before its removal (after one week) a Gram stain culture and sensitization test are made. Any necessary specific medication is then given. If the patient cannot urinate freely the catheter is reinserted, then removed for another trial in 48 to 72 hours. Remind the patient that 10 to 14 days is average for recovery, that patients are always able to void eventually, that straining does not help.

Patients who can void to some degree may be catheterized when more than mildly uncomfortable. Encourage hot Sitz baths as needed and suggest that the patients void only when they feel the urge. If residual urine is 300 cc. reinsert the balloon catheter for another 48 hours; if less than 300 cc. catheterize twice daily or as needed until less than 90 cc. on two occasions.

Some of these patients may be sent home with a catheter indwelling, with instructions to open and drain the catheter each hour during the day and each four hours during the night. Being home overcomes some of the psychic difficulty. The patient may return as an outpatient for catheter removal. More than 50% of patients after extensive bladder repair are unable to void when the catheter is first removed (after one week).

Wilson, T. R., *Illinois M.J.*, 115:185-186,1959.

Gastric Carcinoma in Its Curable Stage

This cancer in the first stage is confined to the stomach and curable by adequate resection; in the second stage eradication by resection is difficult or impossible; in the third, distant metastasis has taken place and there is no possibility of cure. In most cases, vague digestive symptoms began to appear before metastasis has occurred.

Of 82 cases, 26 were treated by gastrectomy and the others had either no treatment or a palliative procedure such as gastro-enterostomy. Nine lived five years or longer, making a 5-year cure rate of 11% of the total number. In the analyzed cases with 5-years or more survival, no single symptom was felt in all cases, but there were six that were common. In decreasing order of frequency these were epigastric discomfort (78%), gas (67%), loss of weight (67%), loss of appetite (45%) and nausea (45%). Other symptoms were vomiting, sour stomach, weakness, full feeling, indigestion, gnawing, lack of energy, feeling of pressure in the pit of the stomach.

Exploratory laparotomy is the only method by which a definite decision for or against gastric resection can be made. The hope for improvement lies in more gastric resections, made possible by earlier careful search for gastric cancer when certain vague symptoms first appear.

Myers, H. C., *West Virginia M.J.*, 55:158-160,1959.

briefs: THERAPEUTIC

Treatment of Cutaneous Infections with a Tetracycline-Novobiocin Combination

Capsules containing a combination of tetracycline phosphate, 250 mg., and novobiocin, 125 mg., (Panalba) used either alone or in conjunction with methylprednisolone (Medrol) had an excellent result in 82 of 92 patients treated for many pyogenic diseases of the skin. The only side effect was loose stools in four cases after 10 days of treatment. Hemograms were made in some cases, and no pathologic variations were manifested.

The tetracycline-novobiocin capsules were given to all 92 patients for a period of four months. A minimum of 3 capsules, usually 4, were given daily for at least two weeks. This medication controlled the pustular and cystic phase of acne vulgaris and reduced resultant severe scarring. In other patients, erythema, induration and edema of the leg ulcers were favorably influenced. Definite value was noted in the treatment of impetigo contagiosa, infections of the feet, hidradenitis, and in the prevention of infection of secondary burns.

In two severe cases of pyoderma gangraenosum treated with one tetracycline-novobiocin capsule every three hours plus 8 mg. daily of methylprednisolone, complete healing was achieved in one and definite improvement in the other.

The addition of 8 mg. daily of methylprednisolone to previous therapy of four capsules daily of the antibiotic combination hastened the healing of erythema multiforme. Lip and mouth lesions in these cases showed response to the antibiotics alone, but bullous and concentric ringed lesions were unchanged until corticosteroid therapy was added. This same therapy was used for the treatment of infectious eczematoid dermatitis with similarly excellent results.

Goldberg, L. C., *Antibiotic Med.*, 5:125-127,1958.

Eighth Nerve Deafness Following Kanamycin Administration

Kanamycin, like neomycin and streptomycin, may damage the vestibular portion of the eighth nerve in certain patients, most probably in those with impaired kidney function. Small doses employed in such persons may rapidly produce toxic effects which would not occur if their kidneys were able to eliminate the drug and its metabolites efficiently.

A man of 52, diabetic for 25 years, developed persistent draining furuncles with abscess formation over the left temporoparietal area and over the left arm. Staphylococcus albus was cultured from the lesions. After sulfisoxazole, chloramphenicol, tetracycline, erythromycin, and penicillin were administered without response, therapy with kanamycin was insti-

tuted, 2 gm. being given intramuscularly in divided doses. Four days later the patient reported that voices sounded muffled and distant to him, and that the ringing of a telephone and barking of a dog were inaudible. Extreme dizziness and tinnitus ensued, and for 48 hours thereafter urine excretion became scanty. Within the following week bilateral deafness developed, and inactive vestibular mechanisms were found on both sides after calorie stimulation. A hearing loss of 95 per cent in the patient's left ear and complete loss in the right ear was revealed by hearing test, no improvement being reported since treatment with kanamycin was stopped. Vertigo had also continued and is constant.

Lustberg, A., & Hamburger, M., *J.A.M.A.*, 170:806, 1959.

Steroid Therapy in Ocular Disease

The role of steroids is to relieve symptoms rather than to cure disease. Dendritic ulcer (herpes simplex) and fungous keratitis are the only contraindications. When specific therapy is lacking, steroids are indicated for treatment or prevention of any ocular condition classed as inflammation, edema, allergy, granulation tissue, or infection. In infection, concurrent antimicrobic therapy is mandatory, and in allergy, supplemental antihistaminic therapy is advisable. Topical administration may suffice for diseases of the external eye and the iris. All others demand systemic therapy. Subconjunctival injection, which provides local "depot" action effective for 3-14 days, is especially useful in cases where side effects limit systemic dosage and for chorioretinitis juxtapapillaris. Though each dose schedule for systemic therapy must b "tailored" to the patient and to th severity of disease, 10 guides ar helpful.

1. When allowance is made for dif ferences in potency, various steroid can be used interchangeably. Follow ing are equivalent daily doses usuall suitable for initiating therapy: ACTH, 80-160 units in gel or zinc form I.M. or 20-25 units in 1000-cc 16-hour drip I.V.; cortisone, 200-30 mg.; hydrocortisone, 100-125 mg. prednisone or prednisolone, 30-4 mg.; triamcinolone or 6-methylpred nisolone, 24-32 mg.; dexamethasone 2.4-3.0 mg.

2. Fairly high levels should be con tinued until response is good. Dose can then be tapered off gradually in decrements of about 10%.

3. It is much safer to start too high than too low.

4. If relapse occurs during tapering off, dosage should be raised at once.

5. Continuing therapy when its need is doubtful is much wiser than stopping it too soon.

6. A short course of therapy (7-14 days) may be stopped over a period of 1-7 days.

7. After prolonged therapy, sud den termination may produce a re bound. Tapering off more gradually gives better results.

8. Side effects may be obviated by giving smaller doses reintorced by topical or subconjunctival therapy.

9. A patient refractory to one ster oid or troubled by side effects may respond well to another.

10. Most therapeutic failures are due to inadequate doses stopped too soon.

Gordon, D. M., *North Carolina M.J.*, 19:473-47 1958.

briefs: OBSTETRIC

Therapeutic Donor Insemination

In one marriage in six (17%) the couple is involuntarily childless, and in these marriages 10% of the husbands are sterile or so nearly so that treatment is hopeless. The term *therapeutic donor insemination* was suggested rather than *artificial insemination* for esthetic considerations. Among the reasons for insemination are azoospermia, grave oligozoospermia, unfavorable congenital qualities, Rh incompatibility, and impotency. Couples for insemination must be emotionally stable, must recognize the psychological, emotional and legal consequences that may ensue, and that the problem is one they must face for the remainder of their lives. The couple must be good parent material, and not merely seeking a way to "save our marriage." The entire process must be explained to the couple —the manner in which the donor is selected, his fertility, familial history, physical and mental alertness, the matching of his racial, physical, emotional and blood factors, with the corresponding factors in the husband and wife, the anonymity of the donor, the legal status of the child, the manner in which the records are kept in the office, the usual time interval before pregnancy occurs and the probable cost. Then a "cooling off" period of one to several months before a final decision is made. If there is doubt in the physician's mind, insemination should not be started, it should be discontinued if this doubt arises later. The method of insemination is too simple to need description.

This series includes 440 women, 41 of whom were still under treatment. Of the remaining 399 patients, 303 became pregnant (75.94%) and 216 delivered 220 normal, live infants. There were 67 miscarriages (22.11%) somewhat higher than the proportion of spontaneous miscarriages reported. In the 303 cases in which pregnancy occurred, the total number of inseminations performed on the day of ovulation was 700, 43.2 pregnancies per 100 inseminations. A total of 95 donors were used — some only once or twice, others more frequently. Semen from 40 of them did not impregnate any of the potentially fertile women in the series. Not all of the 96 cases in which conception did not occur should be counted as failures. Twelve patients became discouraged after one cycle, 15 after two cycles and another 15 after three cycles—making a total of 42 (43.6%) who stopped at or before the third month. It is probable that if these patients had continued, a large majority would have become pregnant. Another 25 stopped in the next three months. Only four patients continued inseminations longer than a year.

Haman, J. O., *California Med.*, 90:130-133,1959.

Heredity and Congenital Heart Disease

Nowadays parents who have had a child with a defect often ask whether or not another child is likely to be similarly affected. The increasing success of the surgical treatment of congenital heart diseases gives the problem of their causation an added interest, because those who would otherwise have died in childhood may live to reproduce. Thus, if heredity is important, the frequency of the genes responsible may rise in the population.

The high frequency of cardiac defects in the children born of women who have had rubella during the first 8 weeks of pregnancy is well established, also that the cardiac abnormalities of the rare Marfan's syndrome are determined by the presence of a single dominant gene, even though the heart is not affected in every one. In the great mass of cases, however, the cause is unknown.

There are many reports of family pedigrees with more than one affected member, and recently there has been added 3 more families, 2 of them each with 3 cases of defect of the atrial septum to the reports of 141 such families published since 1941. Forty families with 2 or more cases of congenital heart disease have been reported and noted that usually the affected members of a family had the same type of malformation. This multiple familial occurrence does not prove that the defects have a genetic basis, as a certain number may be expected by chance alone and a whole family may be exposed to some particular environmental cause. Many have reported the incidence of congenital heart disease in the sibs of patients as between 1% and 2%. In each series it has been much highe than the incidence in a control grou or than that calculated for the gen eral population. Even so, the frequen cy is not so high as to suggest tha heredity plays an important part.

Enough is known about the rol of heredity for the physician to reas sure parents who have had one af fected child that the chances of a 2n being affected are less than 1 in 5 This is with the proviso that there i no other family history of congenita defect, and that the parents are no related.

Annotation, *Brit. M.J.*, 1:704-705,1959.

A Case of Twin Pregnancy in a Double Uterus

Several points arise from this cas that merit discussion.

1. What is the mechanism of th onset of labor, bearing in mind tha in this case one uterus went into la bor while the other did not?

2. What causes the uterine muscl to change from contraction and rela ation to retraction? In this case th right uterus was retracting durin the expulsion of the first twin whil the left uterus was undergoing first stage contractions.

3. What is the cause of toxemia This case suggests that placenta in farcts are the cause rather than th result of the toxemia.

4. What causes lactation to begin

A review of the literature show that the only similar case is reporte in which twins were born alive 5 days apart in a patient with a com pletely double uterus.

Kennedy, N., *Brit. M.J.*, 1:486-487,1959.

briefs: DIAGNOSTIC

ignificance of Valvular volvement in Acute Rheumatic ever

Patients convalescing from rheumatic fever either do or do not have heart disease. Of those who do not, some will later have signs of it. Each of 427 patients had been examined at monthly intervals for at least two years after an attack of rheumatic fever. All but 17 had been hospitalized for acute or convalescent care of the immediately preceding rheumatic attack, and had continuously received one of three antimicrobial agents to prevent recurrences of streptococcal infections.

Fifty-eight patients with already-acquired rheumatic heart disease due to earlier attacks of rheumatic fever were excluded, as were 10 other patients with heart disease whose data of earlier attacks were inadequate. The remaining 359 were considered free of rheumatic heart disease before their later admission to the follow-up clinic. The acute rheumatic episodes were analyzed and tabulated according to cardiac size, pericarditis, congestive heart failure, atrioventricular conduction and auscultatory findings.

Cardiac enlargement, congestive heart failure and pericardial friction rubs occurred almost exclusively in patients who had valvular involvement. Prolongation of PR interval did not correlate with the subsequent cardiac status. The data strongly suggest that the auscultatory phenomena during the acute attack of rheumatic fever are of primary importance in predicting the cardiac prognosis. Patients without "valvulitis" or with "probable valvulitis" may be reasonably assured that heart disease will not occur as a sequel of the rheumatic attack. These results have obvious clinical and psychologic importance in the management of patients with rheumatic fever.

Feinstein, A. R., & Massa, R. D., *New England J. Med.*, 260:1001-1007,1959.

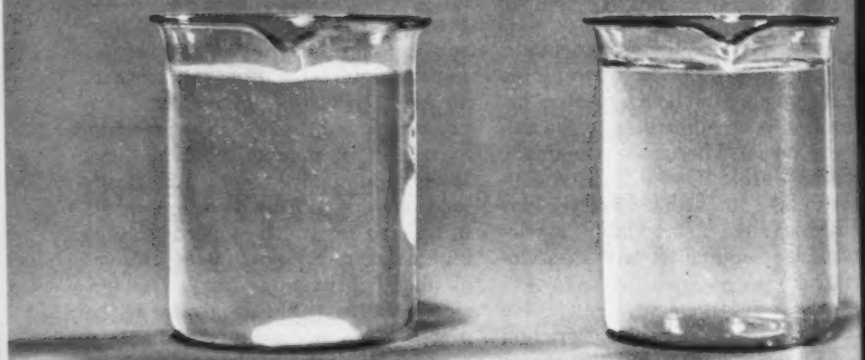
Improved Urine Sample Reagent Strip

A convenient ferric chloride test for the diagnosis and follow-up of phenylketonuria as well as for the diagnosis of salicylate and phenothiazine intoxication is provided by an improved form of Phenistix reagent strips. Each strip is of cellulose, impregnated with ferric and magnesium ions and cyclohexylsulfamic acid. When phenylpyruvate (diagnostic for phenylketonuria) is present in the urine, the ferric ions give a gray to blue color, depending on the amount of phenylpyruvate present. The ferric ions turn a bluish-purple in the presence of salicylate metabolites and a reddish-purple in the presence of phenothiazine metabolites, the depth of each hue proportionate to the amounts of reactive materials in the

avoid the risk of insoluble, irritating aspirin particles

Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis.[1-10] Studies performed in conjunction with gastrectomy[4, 5] and gastroscopy[2] have shown insoluble aspirin particles firmly adherent to the gastric mucosa and imbedded between rugae. Reactions varying from mild hyperemia to erosive gastritis have been reported to occur in the areas immediately surrounding these adherent particles.[2, 4, 5] This is reported to be particularly true in patients with peptic ulcer.[4]

CALURIN is the freely soluble, stable calcium aspirin complex. Its high solubility forestalls gastric irritation or damage



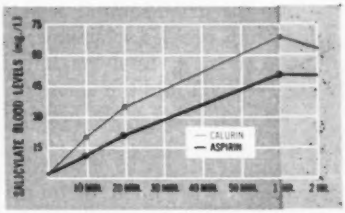
Regular aspirin crystals 24 hours after being mixed into water.

Calurin crystals in solution one minute after being mixed into water.

CALURIN*

STABLE SOLUBLE CALCIUM-ACETYLSALICYLATE-CARBAMIDE

Particle-induced ulceration — section through lesion found in gastrectomy specimen. An aspirin particle was found firmly imbedded in this undermined erosion. Such lesions may be associated with the relative insolubility of aspirin, which remains in particulate form after dispersion in gastric contents.



Calurin, being freely soluble, is promptly available for absorption into the systemic circulation. Salicylate blood levels in 12 subjects receiving both Calurin and plain aspirin were found to rise more than twice as high within ten minutes following Calurin. Also, these levels persisted higher for at least two hours.[11]

CALURIN is the aspirin of choice, especially when high-dosage, long-term therapy is indicated:

1. High solubility forestalls gastric irritation or damage. This advantage is of special importance in arthritis and other conditions requiring high-dosage, long-term therapy.
2. Produces high salicylate blood levels rapidly for prompt analgesic, anti-pyretic, anti-arthritic effect.
3. Sodium-free — for safer long-term therapy.
4. Flavored: can be chewed or dissolved in the mouth without water if desired — an advantage for patients requiring aspirin administration during the night and for pediatric patients.

Dosage: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever in adult patients, the usual dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic fever, 3 to 5 tablets 4 or 5 times daily. For children over 6 years, the usual dose is 1 tablet every 4 hours; for children 3 to 6 years, ½ tablet every 4 hours, as required. Not recommended for children under 3.

REFERENCES: 1. Waterson, A. P.: Aspirin and gastric haemorrhage, Brit. M. J. 2:1531, 1955. 2. Douthwaite, A. H., and Lintott, G. A. M.: Gastroscopic observation of the effect of aspirin and certain other substances on the stomach, Lancet 2:1222, 1938. 3. Editorial Comments: The effect of acetylsalicylic acid (aspirin) on the gastric mucosa, Canad. M. A. J. 80:47, 1959. 4. Muir, A., and Cossar, I. A.: Aspirin and ulcer, Brit. M. J. 2:7, 1955. 5. Muir, A., and Cossar, I. A.: Aspirin and gastric haemorrhage, Lancet 1:539, 1959. 6. Schneider, E. M.: Aspirin as a gastric irritant, Gastroenterology 33:616, 1957. 7. Bayles, T. B., and Tenckhoff, H.: Salicylate therapy in rheumatic diseases, Scientific Exhibit, Ann. Mtg. A. M. A., San Francisco, Calif., June, 1958. 8. Batterman, R. C.: Comparison of buffered and unbuffered acetylsalicylic acid, New Eng. J. M. 258:213, 1958. 9. Cronk, G. A.: Laboratory and clinical studies with buffered and nonbuffered acetylsalicylic acid, New Eng. J. M. 258:219, 1958. 10. Editorial: Aspirin plain and buffered, Brit. M. J. 1:349, 1959. 11. Smith, P. K.: Plasma concentration of salicylate after the administration of acetylsalicylic acid or calcium acetylsalicylate to human subjects, Report submitted to Smith-Dorsey from Dept. of Pharmacology, Geo. Washington Univ. School of Medicine, Washington, D. C., Sept. 5, 1958.

*TRADEMARK

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

urine. In all instances the purple hues are clearly distinguishable from the gray to blue colors obtained with the phenylketonuria test. Phosphate interference with the color reaction is minimized by the magnesium ions, while the cyclohexylsulfamic acid acts as a buffer to facilate optimal readings. Color reaction occurs within a few seconds after the strip is dipped into the urine sample or saturated by being pressed against a wet sheet or diaper. A final reading is made at 30 seconds and the color compared with that on a scale provided with the strips.

Urine samples from 35 institutionalized patients with phenylketonuria were tested with the strips and, after acidification, with 10 per cent ferric chloride solution. In all instances the strips reacted as intensely as the solution, and retained the color longer. Ten of the urine specimens, retested after standing in the refrigerator at a temperature of 40° F for three weeks, reacted as previously with the strips but gave weaker reactions with the ferric chloride solution.

Neilhaus, G., *J.A.M.A.*, 170:1052-1053,1959.

Alimentary Bleeding of Obscure Origin

At one large hospital nearly all the patients with gastrointestinal bleeding are admitted under the department of gastroenterology. Such patients may be classified as suffering from hematemesis, melena (altered blood in the stools), rectal bleeding (fresh blood in the stools), or as a combination. Apart from clinical examination, the investigation of these patients included a routine barium meal study, and sometimes a follow-through barium meal examination and barium enema investigation. As a routine, gastroscopy is used unless definitely contraindicated. In cases of melena or rectal bleeding sigmoidoscopy is done. Other diagnostic measures are esophagoscopy, estimation of liver function, etc.

During a five year period, 151 patients were admitted in whom no cause for the intestinal hemorrhage could be detected. Nine of these cases with melena or rectal hemorrhage are included despite the x-ray finding of colonic diverticulitis. During the same period there were 1,051 admissions with bleeding from acute or chronic peptic ulceration. Thus, for every seven cases admitted with bleeding due to ulcer, there was one in which the cause up to the time of discharge remained unestablished.

Of these 151 the fate of nine remains unknown. The remaining 142 cases have been followed over a period of three to seven years. In a quarter of the cases of intestinal bleeding in which no lesion is detected at the time of hemorrhage, subsequent investigations reveal what may have been the cause. Perhaps of equal interest are the remaining 77% who are a diagnostic mystery or are called "gastritis" or "acute gastric erosion."

The most common cause found when re-examined or readmitted was peptic ulceration. This occurred in 21 patients, with four gastric and 17 duodenal ulcers. Ten patients were subsequently found to be suffering from: malignant neoplasm of the stomach in four, the colon in three, the pancreas in one, and the small intestine in two.

In a review of 305 patients with gastric carcinoma who underwent gastroscopy this examination was nearly as successful as radiology in

the detection of the growth, and when both methods were used 96% of lesions showed as abnormality in one of them. In cancer of the fundus, a soft-tissue mass occasionally deforms the gastric air bubble, but barium may sink below the lesion quickly. Here gastroscopy can be of value. A fundal neoplasm must not be missed, as such growths may be amenable to surgical removal.

Among 142 patients followed up for three to eight years, there were 33 (23%) in whom a positive diagnosis was subsequently made which may have explained the original episode. The diagnoses made were chronic gastric ulcer in four, duodenal ulcer in 17, carcinoma of stomach in four, carcinoma of colon in three, carcinoma of pancreas in one, carcinoma of small intestine in two, Meckel's diverticulum in one, hereditary hemorrhagic telangiectasis in one. Among the less common causes special attention is drawn to pseudoxanthoma elasticum, von Willebrand's disease, diverticulosis of the colon and Mallory-Weiss syndrome.

Jones, F. A., et al., *Brit. M.J.*, 1:1138-1142,1959.

Diagnostic Considerations of Acute Hepatic Diseases

Invariably the liver is implicated when jaundice is a manifestation. Yet the liver is sometimes overlooked in spite of obvious jaundice, and it is erroneously assumed that an extrahepatic obstructive lesion is causative. This error is becoming more and more infrequent and perhaps would not be of serious import had not toxic hepatitis of obstructive nature become recognizable. Such is also the case in the acute cholangiolitic form of hepatitis. In both of these situations the intrahepatic lesion produces a picture which resembles extrahepatic obstruction jaundice. If jaundice has not appeared as part of the acute hepatic disease, the liver may not be considered seriously as the primary site of disease. Too often patients are labeled "non-icteric hepatitis" on a history compatible with hepatitis plus an isolated abnormal liver function test. Many of these cases later are proven to be no liver disease at all. A series of cases was recorded as non-icteric hepatitis, most of them in women, several of whom eventually delivered healthy youngsters. Obviously these patients were in the first trimester of pregnancy, experiencing the usual symptoms with that phase of pregnancy, and were erroneously diagnosed as having hepatitis.

Clues which should alert the physician to the fact that he is not dealing with a viral type of hepatic disease are several. One may get a history of exposure to some form of toxin or drug, prolonged history of weakness and easy fatigability, prolonged history of high or low-grade fever. High fever of more than a week's duration is generally not compatible with acute viral hepatitis. A marked leukocytosis is rarely found in a viral infection. A moderate to marked splenomegaly is against viral disease, and for a lymphomatous type of disease. Lymphadenopathy, although not inconsistent with viral disease, may mean another form of acute hepatic disease. Loss of weight suggestive of tumor cachexia is very rare. Glutamic pyruvic transaminase test may be more specific for hepatic necrosis. Transaminase determinations may be a more helpful diagnostic guide than other liver function studies. Liver biopsy should also be considered.

Lindert, M. C. F., *Wisconsin M.J.*, 58:153-156,1959.

- *Tinea corporis* usually clears in 2 to 4 weeks; itching stops in 3 to 5 days
- *Tinea pedis* improves in 1 to 2 weeks; complete clearing may require 3 to 6 weeks
- *Tinea capitis* improves in 2 to 3 weeks; is usually cured in 3 to 5 weeks
- *Onychomycosis* (tinea of the nails) fingernails clear in 3 to 4 months; new normal growth is seen earlier; toenails require longer treatment
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Literature on details of administration and dosage is available upon request.

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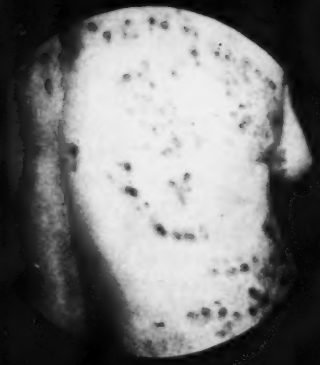
(1) Blank, H., and Roth, F. J.: A.M.A. Arch. Dermat. 79:259 (March) 1959. (2) Williams, D. I.; Marten, R. H., and Sarkany, I.: Lancet 2:1212 (Dec. 6) 1958. (3) Goldfarb, N., and Rosenthal, S. A.: Current M. Digest 26:67 (April) 1959. (4) Wrong, N. M.: Canad. M.A.J. 80:636 (April 15) 1959.



Before treatment—tinea of the body of 9 years' duration infecting organism: **Trichophyton rubrum.**

After 18 days of treatment with Grifulvin. Healing is virtually complete.

Photographs courtesy of Harvey Blank, M.D., Miami, Fla. The patients shown above received Grifulvin (griseofulvin, McNeil)

briefs: PEDIATRIC

Heart Failure in Infants

Fifty infants with heart failure were reviewed to determine early signs of failure and incidence of respiratory infection. The reason for referral was noted in 40 cases. Although 26 of these were in failure when they were first seen, a diagnosis of heart failure was made in only one case before admission. In two-thirds of the infants heart disease had not previously been suspected, but diagnosis implying respiratory disease or feeding difficulty being made.

In 10 infants (20%) no congenital cardiovascular anomaly was detected; six developed heart failure with acute pulmonary infection; in four, failure was associated with a cardiac arrhythmia. In 40 infants heart failure occurred with congenital heart disease. Nineteen of these had lesions for which operation offers a reasonable prospect of improvement or cure, 14 (73%) recovered from heart failure.

In a number of cases of heart failure with congenital heart disease, screaming after feeds and profuse sweating were noted. Heart failure should be considered when a pale, sweating infant with normal or subnormal temperature is seen.

In six cases bronchopneumonia precipitated failure in the absence of detectable cardiovascular anomaly. All recovered after treatment. In the three cases of infection with cardiac arrhythmia there were two recoveries. No evidence of infection was found in 21 cases. Fourteen infants (66%) in this group died, the majority having severe and complicated malformations. Of 20 cases with respiratory infection nine proved fatal (45%). Six of the fatal cases were of cyanotic congenital heart disease, and in four of these the infection appeared to be confined to the upper respiratory tract. In the remainder pulmonary consolidation or collapse was found.

The mortality in this series was 48%. Fiftten of 16 infants, with right-to left hunts large enough to produce cyanosis, died. The respiratory infection made little difference to the outcome. Of 24 infants with acyanotic congenital heart disease, eight died. In this group infection probably played a bigger part in failure, and the prognosis of heart failure may improve if the infection can be successfully treated with antibiotics.

Simpson, K., *Proc. Roy. Soc. Med.*, 51:1022-1023, 1958.

Treatment of Salicylate Poisoning with Lavage and Induced Emesis

Sodium salicylate in doses of 0.5 gm. per kg. was given fasting dogs of 6 to 10 kg. weight, and lavage or emesis fluid was examined for the salicy-

late content. It was found that in the recovery of salicylate the initial aspiration before introduction of lavage fluid is as important as the lavage. Lavage within 15 minutes was no more effective than emesis induced within 30 minutes. Spontaneous emesis was not as effective as induced emesis. Since neither lavage nor emesis under optimal conditions was consistently effective, all patients after either form of therapy should be observed carefully for signs of increasing drug intoxication.

Arnold, J. B., et al., *Pediatrics*, 23:286-301,1959.

Partially Treated Meningitis in Infants

Many infants with meningitis are treated empirically at home without a definite diagnosis having been made. This treatment modifies the clinical picture of the illness and may make an accurate diagnosis impossible.

A girl of 15 months was admitted to the hospital with a history of sudden onset of fever and vomiting eight weeks previously. After a six day course of sulfonamides she improved but remained irritable and anorexic, and continued to lose weight. The family doctor thought she had "pink" disease. On admission she was a wasted, irritable baby who resented being handled, had photophobia but no evidence of infection, no neck stiffness, no rise in fontanelle tension. A lumbar puncture showed a purulent fluid from which H. influenzae was grown. After treatment with sulfadiazine and systemic penicillin for 10 days she rapidly improved, and at the time of discharge was a normal baby. Four years later she was a healthy, intelligent child.

A boy of 19 months, 18 days prior to admission had suddenly become febrile and irritable and had vomited some food. A short course of sulfonamides brought slight improvement. He continued to be irritable and anorexic, was admitted with temperature 102° and slight neck stiffness. A lumbar puncture showed a purulent fluid, but no organisms were cultured. After receiving sulfadiazine and systemic penicillin for 10 days he made a good recovery. Five years later he appeared to be a normal child. Five similar cases, with similar outcome are reported.

Meningitis in an infant is nearly always of sudden onset and should always be suspected in a sudden febrile illness with anorexia, vomiting, irritability, dislike of being handled, episodes of crying for no apparent reason and a dulling of the intellect manifested by a lack of interest in the surroundings.

Untreated, the infant becomes obviously seriously ill within a matter of hours or a day or two. Given a short course of sulfonamides the nature of the illness is altered and the infant continues in a chronic state of ill-health, irritability and anorexia. Even though the diagnosis is not made until some weeks later, a total recovery seems to occur when energetic treatment is given, and in none of these cases has any neurological sequela occurred.

As medicine advances and more antibiotics are discovered, a probability arises of more infective disease processes being modified by incomplete treatment. Thus it may well be that medical teachers will have to describe not only the clinical picture of an infective disease but its pattern when modified by partial treatment.

Heycock, J. B., *Brit. M.J.*, 1:629-630,1959.

Fractures of the Elbow in Children

Very few fractures in children require open reduction. Over-riding of half an inch in femoral fractures and even more in fractures of the humerus are acceptable. Moderate angulations are not, particularly if in the middle third of the bone. These can usually be corrected by closed reduction. Moderate to severe angulations close to epiphyseal lines will often correct with growth. Elbow fractures require more open reductions than any of the other fractures in children. X-rays of the opposite elbow must be obtained.

A fall on the outstretched arm may result in a fracture of the radial head, the capitellum, or the supracondylar area. If the radial head and neck are completely off or are angulated 30 to 40° the elbow should be opened, the head replaced, and held in proper position with several silk or catgut sutures.

Fractures of the capitellum, if displaced, should be openly reduced and held with nail, silk, or catgut. Fractures of the medial epicondyle with dislocations or subluxations require an open reduction if gentle manipulation under general anesthesia is unsuccessful. The medial epicondyle can usually be removed from the elbow joint and tacked with suture or pin in its normal position, avoiding damage to the ulnar nerve. Straight forward medial epicondylar fractures do not as a rule need an open reduction unless there are signs of ulnar-nerve impingement.

In fracture of the ulna with dislocation of the radial head the dislocation of the head may be missed and, if so, a normal elbow never results. If the angulation of the ulna is anatomically reduced, the radial head will usually reduce. Frequently an open reduction of the ulna is necessary.

Supracondylar fractures rarely require open reduction, but can be difficult to reduce. Complications from these fractures can be extremely grave. In supracondular fractures the hand should be immediately examined as to pain, pallor and pulse. If no radial pulse is felt before or after reduction, skin traction (Dunlop's) or skeletal traction (pin through the olecranon) should be applied immediately.

Hyaluronidase should be injected into the soft tissues of the elbow. Lyophilized trypsin given intramuscularly may be of help in reducing the edema.

If the signs of Volkmann's contracture persist after a few hours, the elbows should be opened through the antecubital space and the brachial artery explored.

Crane, L., *J. Maine M.A.*, 50:9-15,1959.

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briefs: UROLOGIC

Gonorrhea

The diagnosis of the acute form of gonococcus in the male is easy, in the female, diagnosis requires more effort. Early in its course considerable reliance can be placed on the smear. But if the patient has few or no symptoms, or if the infection is subacute or chronic, the smear is unreliable and cultural methods are necessary. In such cases the combined smear and culture method is at best, only 70% sensitive.

Prophylactically, 600,000 units of penicillin are given to a woman who has been exposed to a male patient with gonorrhea. Some use 1,800,000 units of penicillin as the prophylactic dose. There are female carriers of gonorrhea; the evidence is against male carriers.

There is urgent need for a method of earlier confirmation of suspected gonorrhea. The most promising is the use of fluorescent-tagged antibody procedures. In the past year a transient and heat-labile antigen was found that was believed to be specific for the gonococcus. If this suspicion is confirmed it will be a tremendous step forward in the rapid laboratory diagnosis.

One dose of 600,000 units of procaine penicillin G in aqueous suspension intramuscularly will cure 95 to 98% of cases of acute gonorrhea in the male. The 2 to 5% who fail to respond in 48 hours are given an additional 600,000 units. There have been no failures with the second injection. The same initial dose is used in the female, repeating in 48 hours if the smear or culture is positive. If the smear is still positive two days later, another injection is given. When these women were hospitalized to ensure that there would be no exposures after treatment, they became negative by smear and culture in 24 to 48 hours. Treatment-resistant cases of gonorrhea in the female have been reported elsewhere.

A patient sensitive to penicillin may use a sulfonamide, 1.0 gm. four times daily for five days, or tetracycline, 0.5 gm. every six hours for no less than four doses. Other effective antibiotics are erythromycin and carbomycin.

Two negative smears and cultures at least 24 hours apart are required before a patient is discharged as cured. Males who have no discharge void in a sterile flask, and a smear and culture of the urinary sediment

are made. This is preferable to a prostatic smear and culture, yielding a higher proportion of positive results.

Each patient with gonorrhea should be given at least two blood tests for syphilis, the last three months after the last admitted exposure. Each patient should be interviewed for contacts. Female sex partners of the past three weeks should be examined.

Fiumara, N. J., et al., *New England J. Med.*, 260: 917-924,1959.

Infections of the Urinary Tract in General Medicine

Infections of the urinary tract may rank second only to respiratory infections in frequency. Significant bacilluria may be present without pyuria in patients who are otherwise normal. Catheterization is not necessary as a routine in the bacteriologic study of the urine in males; examination of a second glass specimen is sufficient. In women, specimens obtained by careful catheterization are preferred. Staining by the Gram method is frequently very helpful in the preliminary diagnosis.

In vitro studies of bacterial sensitivity to antibacterial agents need not be done routinely in acute infections since they are time-consuming, expensive and may be of no help. When an acute infection is resistant to therapy, studies including urographic and cystoscopic may be needed. About 75% of the acute infections respond to initial therapy; 50% of these infections may recur. Only 25% of chronic infections are controlled. These recurrences may be reduced in number by more intensive initial therapy, cure of underlying uropathy, and intermittent use of a suppressive agent.

The proper management of infections of the urinary tract requires:

1. Identification of pathogens by the Gram stain, and cultures in more severe, recurrent, or chronic infections.

2. Initiation of treatment with an antibacterial agent if condition of patient warrants when bacteria are identified.

3. Re-evaluation of regimen if *in vitro* inhibition tests later indicate a poor choice of antibacterial agent.

4. Determination of possible synergism of combinations of antibacterial agents in some infections.

5. Tests to determine whether bacteria are being killed by the antibacterial agents used.

6. Correction of any condition predisposing to infection, procedures to assure free access of antibacterial agents to site of infection and insure adequate drainage of urine when indicated.

The routine administration of any of the antibacterial or bacteriostatic agents to those persons who have no cardiovascular defects should not be attempted. The practice of injecting a prophylactic dose against any possible infection that might result from an instrumentation or an operation is to be condemned. All attempts at controlling known infections should be made prior to conducting manipulation of the urinary tract. The careful physician should also bear in mind that it may be necessary to re-examine the patient at any stage of the management of his urinary tract infection. The case may then require re-evaluation and the regimen altered accordingly.

Martin, W. J., et al., *Proc. Staff Meet. Mayo Clin.*, 34:187-199,1959.

Doctors and the Law

A continuing series of articles discussing actual cases involving medico-legal problems of interest to all practicing physicians

CHARLES J. FRANKEL, M.D., LL.B., *Editor*

▶To make a case for the jury, does plaintiff have to present expert testimony that leaving a small bit of gauze or threads in a wound constitutes malpractice?◀

The U.S. Court of Appeals for the District of Columbia decided this question in *Young* vs *Fishback*, 262 F. (2d) 469 (1958). About a year after defendant performed an appendectomy on plaintiff, an abscess the size of a small egg had developed on the scar. Defendant operated to relieve the abscess. Plaintiff contended the abscess had been caused by a foreign substance left in the wound during the first operation. Plaintiff produced no direct evidence that any foreign substance was found during the second operation but did produce witnesses who testified that defendant told them a foreign substance had been found. Defendant denied any such admissions. It can be inferred from plaintiff's evidence that a small portion of or a few threads from a piece of gauze had been left in the first incision and that such material will not be absorbed. The trial judge directed a verdict for defendant because plaintiff produced no expert testimony that leaving a small bit of gauze or a few threads in the wound is not in accord with the standards of skill and care of surgeons in the community.

The Court said the case should have been submitted to the jury, be-

cause everybody knows it is not approved surgical practice to leave in a patient's body a small bit of gauze or a few threads therefrom, or any other foreign unabsorbable substance, no matter how small. It was a jury question whether defendant had left even a small piece of gauze or other foreign substance in the wound thereby causing the abscess.

►Can a doctor, who has withdrawn from a medical partnership and is now practicing in violation of a restrictive covenant in the partnership agreement, be enjoined from such practice, if a clause of the covenant, providing for forfeiture of unpaid balance of partnership interest upon its violation, has been enforced?◄

The Illinois Supreme Court passed on this question in 1956 (*Bauer* vs *Sawyer,* 134 N.E.(2d) 329). Defendant was for some time a member of a medical partnership known as the Kankakee Clinic. He withdrew from the partnership; shortly thereafter he opened offices for the practice of medicine and surgery in Kankakee. The partnership agreement provides that an individual partner's interest can be terminated by retirement because of physical incapacity, voluntary withdrawal, or expulsion for unprofessional conduct or failure to carry out the agreement. If an individual partner's interest is terminated, the remaining partners are to purchase his interest at a stated percentage of its value as shown on the partnership books: 100% in case of retirement for incapacity, 80% in case of voluntary withdrawal and 75% in case of expulsion. Under the agreement each partner covenants that, if his interest is terminated, he will not engage in the practice of medicine, surgery or radiology within a 25 mile radius of Kankakee for five years. It further provides that a former partner violating the covenant shall forfeit any unpaid balance of the purchase price of his interest. A partner withdrawing voluntarily is to be paid one-half the purchase price thirty days after withdrawal, the balance to be evidenced by notes payable in one year. An expelled partner is to be paid one-third the purchase price within thirty days, one-half of the balance to be evidenced by notes payable in one year and the other half evidenced by notes payable in two years. The agreement provides that the notes are to be delivered to an escrow agent who is to cancel them upon the remaining partners' certification that the former partner has resumed practice.

Defendant contended he should not be enjoined from practicing because the restrictive covenant is an unreasonable restraint of trade and contrary to public policy. The Court said that, in determining whether a restraint is reasonable, it is necessary to consider whether enforcement will be injurious to the public or cause undue hardship to the one restricted, and whether the restraint is greater than is necessary to protect the one seeking to enforce it. Here, the public interest is in having adequate medical protection. There are now seventy doctors serving the Kankakee area. The Court said that it could not say that reducing this number by one would cause such injury to the public as to justify refusing to enforce the contract. Further, defendant could serve the public interest equally well by practicing elsewhere and there is no showing that he would suffer any special hardship if barred from practicing in Kankakee.

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The territorial limitation to the Kankakee area is not, in light of modern transportation and communication methods, unreasonable; nor is the five-year time limitation unreasonable. The covenant is, therefore, not contrary to public policy.

Defendant further contended that, under the partnership agreement, he had the option of resuming practice if he gave up the unpaid balance of his interest, which was $7451, and which he characterized as liquidated damages. An agreement may, said the Court, be so drafted as to give an option of performing or paying stipulated damages. However, it is clear from the entire agreement involved here that the parties intended that the covenant restricting future activities of former partners was meant to be enforced.

While this case was pending in the lower court, plaintiffs notified the escrow agent of defendant's breach of the covenant and the notes covering the balance of the purchase price of his interest were canceled. Defendant argued this constituted collection of liquidated damages and that it would, therefore, be inequitable to enforce performance of the covenant by injunction. The Court said that an agreement, made in advance of breach, fixing the damages therefor, is not enforceable as a contract and does not affect the damages recoverable for breach, unless (1) the amount so fixed is a reasonable forecast of just compensation for harm caused by the breach, and (2) the harm caused by the breach is incapable or very difficult of accurate estimation.

It is undisputed that the damages here are difficult to ascertain. Whether the parties intended to forecast the probable damages resulting from a breach is a more difficult question. The Court said it thought the parties intended the clause, not as a forecast of damages, but as an additional sanction, by way of penalty, to enforce performance of the covenant. The clause uses the word "forfeit" which tends to exclude the idea of liquidated damages. The fact that part of the payment is withheld also suggests that it was the parties' purpose to secure performance rather than to settle damages. If settlement of damages alone had been intended, it would have been sufficient to have provided for total payment and subsequent recovery of stipulated damages in the event of breach. The fact that the clause covers a withdrawing partner for only one year and an expelled partner for only two years, while the restraint is for five years, also indicates that the purpose of the clause was not to fix the amount of damages.

Nor, said the Court, does the clause meet the requirement that the amount of damages fixed be a reasonable forecast of just compensation for harm caused by the breach. A percentage of the value of a partnership interest may be as accurate a measure of damages as could be devised, but there is no apparent reason for discriminating between withdrawing and expelled partners. If a breach occurs during the first year, an expelled partner loses 50% of the value of his interest, while a withdrawing partner loses only 40%. If a breach occurs in the second year, an expelled partner would lose 25% while a withdrawing partner would be liable for actual damages, whether greater or less than 25% of the value of his interest. These differences cannot be

explained on the ground that the clause was intended as a forecast of the harm caused by a breach; the reason for the differences would appear to be, not that damages would be greater in the case of breach by an expelled partner, but rather that there was greater likelihood of a breach. The Court said the provision was a penalty and that defendants remained liable to plaintiff for the outstanding unpaid balance but were entitled to an unjunction restraining him from practicing in the area.

►Is husband liable for fees for services furnished his wife by anesthetist, procured by hospital, where he had signed form consenting to administration of necessary anesthetics and had made no other arrangement for an anesthetist's services?◄

This question was passed on by the Court of Appeals of Cuyahoga County, Ohio, in 1956 (*Cleveland Anesthesia Group* vs *Krulak*, 135 N.E. (2d) 685). Plaintiff is a group of five doctors specializing in anesthesiology. It is the practice of the hospital where the surgery is performed to have anesthesia administered by one of the plaintiff group, unless the patient's own doctor makes other arrangements. Since he made no other arrangements when scheduling the surgery, the hospital assigned one of plaintiff group to administer the anesthesia. Defendant had signed a form consenting to administration of necessary anesthetics in connection with the surgery on his wife.

Defendant contended that signing the form did not give the hospital the right to employ outside doctors to administer to patients except in an emergency and that the hospital, in hiring outside doctors is practicing medicine. The Court said it is well established that a husband is bound to pay for necessities furnished his wife and that medical services are necessities. There is nothing sinister in a hospital making an arrangement with certain anesthetists, if the patient or his doctor has not made other arrangements. The surgeon, if he has not made specific arrangements for an anesthetist's services, by using the hospital's facilities and accepting its rules and regulations, impliedly requests the services of the anesthetist arranged for by the hospital. Under such circumstances, the hospital cannot be said to be practicing medicine, because it is the surgeon who, in law, impliedly employs the anesthetist. Defendant could have made his own arrangements for an anesthetist's services, but, by signing the consent form, he consented to the prescribed hospital procedure and obligated himself to pay for the anesthetist's services.

►Can a doctor, who irrigates "T" tube, placed in common duct after gall bladder operation, with a 50% alcohol-ether solution, be found guilty of malpractice? Can his negligence be established by his own admissions?◄

These questions were before the Montana Supreme Court in *Thomas* vs *Merriam*, 337 P. (2d) 604 (1959). A series of abdominal operations was performed on plaintiff, the last of which was for removal of his gall bladder. A "T" tube was then placed in the common duct. A few days after being dischared from the hospital, plaintiff went to defendant's office to have the tube irrigated. He became desperately ill after the irrigation and was hospitalized for approximately two months; the diagnosis was hepatitis.

The trial court granted defendant's

motion for nonsuit. Plaintiff contended his evidence was sufficient to make out a case for the jury from which it could find that the 50% alcohol-ether solution was used improperly in irrigating the "T" tube so that the solution passed through the tube into the common duct and then into plaintiff's liver. The Court said a judgment of nonsuit should not be entered unless recovery cannot be had upon any reasonable view of the evidence.

A doctor, testifying for plaintiff, stated that a 50% alcohol-ether solution to irrigate a "T" tube was an accepted medical practice in the community, but that to irrigate the liver with that solution was not accepted medical practice anywhere. He at first testified that, in his opinion, it was impossible to irrigate the liver; however, he later testified that alcohol and ether would cause the sphincter muscle to close and if the gall bladder were out the solution would have no place to go but back up into the liver. There was also testimony by plaintiff's daughter that defendant, when asked why plaintiff suffered so much pain after the irrigation, said he had irrigated the liver through the tube with pressure. The Court said defendant's statement to plaintiff's daughter was an admission he had irrigated plaintiff's liver using an alcohol-ether solution which, according to the medical testimony, was contrary to accepted medical practice. A doctor's negligence, like any other fact, may be established by his own admissions. The Court said there were sufficient facts to warrant submission of the case to the jury.

►Can a licensed doctor be denied membership on staff of public hospital on ground of lack of requisite skills?◄

This issue was before an Illinois Appellate Court in 1958 (*Dayan* vs *Wood River Township Hospital*, 152 N.E.(2d) 205). Plaintiff doctor, licensed to practice in the state, was for several years a member of the Associate Medical Staff of defendant, a public hospital. Staff appointments are made by the Hospital Board, on recommendations of the Active Staff, on an annual basis. When plaintiff was not recommended for reappointment for 1956-57, the Board required the Active Staff to furnish the reason for its action. They furnished a detailed list of 14 specific charges of lack of requisite skill. After a full hearing on these charges, the Board held that 13 had been substantiated.

Plaintiff contended that, since he was licensed, the Board did not have the power to determine he was medically incompetent and to oust him from the staff on that ground. He argued that the Active Staff, generally older, more established practitioners, hold the lifeline on younger doctors because their recommendation is required for appointment and this procedure grants exclusive use of a tax supported hospital to the doctors who agree among themselves that they are the most competent. Admittedly, the proper functioning of the procedure depends on the Active Staff's fairness and integrity, but the public interest demands that a doctor's status should be subject to constant reappraisal, for his original licensing is based on his factual knowledge, not his clinical skill. The Court said that, although there is no absolute, objective standard of medical skill on which such reappraisal can be based, the suggested evils of the "oligrachy" of the Active Staff leave less to fear than the alternative

f potential public harm arising from nlimited access to hospital facilities y licensed doctors regardless of clinal ability. It is only logical that a public hospital have the right to safeguard its interest and the public interest by exercising discretion in the makeup of its medical staff.◀

he Delinquent Child

Delinquent children are of the organic and the functional type. In the rst group are children who have orderline IQs, or who are at the gh-grade moron or even the lowerage level. Many of these children are very aggressive. Others include the post-encephalitic child, the st-traumatic, the epileptics, children with endocrine deficiencies, etc. he post-encephalitics may be very angerous. The "post-traumatics" appear to have a better prognosis.

In the less damaged, dexedrine or tranquilizer may be very helpful. Paradoxically, dexedrine to the hyeractive may reduce activity and timulate the sluggish child to greatr activity. Shock therapy is rarely elpful.

Delinquents of the functional type clude the chronically aggressive ild and the child with neurotic conicts. Parents are apt to say that since e second year he has been restless, nstantly on the go, and getting into ouble, bedeviling or hurting sibngs. As he develops he becomes arder to manage.

The treatment of this group is difficult. Perhaps the best is some form f group therapy or group activity. he children learn to identify with a ounselor or cottage parent. Any how of guilt reaction to the group or ounselor indicates therapy is beoming effective. Gradually many earn to tolerate some degree of frusration, become sensitive to criticisms or sanctions against them, and experience group spirit. After this phase the child becomes amenable to individual psychotherapy in subdivisions to include the child whose misdeeds are on the basis of his neurotic conflicts.

At age 7 to 11 he begins to "feel his oats," and finds that he is able to discharge his hostility *au large*. At prepuberty and puberty-adolescence his conduct becomes worse. He fights the community, all authority, and provokes situations to justify the gratification of his own pleasure wishes and appeases his conscience through punishment. An important factor in producing this state has been the vacillation of the parent between an over-indulgent to a frustrating parent, one minute hugging the child the next minute beating him.

A rare neurotic delinquency is kleptomania. The objects stolen are generally inconsequential; they may have symbolic meaning, much as a fetish. The act is often accompanied by a feeling of excitement more prevalent in adult than child.

The type of delinquency must be assessed. Individual psychotherapy may be very helpful, is generally preferred to institutional, except for drug addiction and serious kleptomania. A family may move to another neighborhood to separate the child from his gang. Treatment offers more hope for the neurotic than for the chronically aggressive child.

Pacella, B. L., *South Carolina M.J.*, 55:41-49,1959.

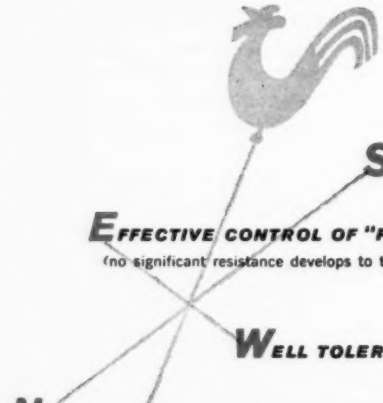
TO STOP DIARRHEA

from all points...growing evidence favors

FUROXONE®

brand of furazolidone

■ Pleasant-flavored LIQUID, 50 mg. per 15 cc. (with kaolin and pectin) ■ Convenient TABLETS, 100 mg. ■ Dosage—400 mg. daily for adults, 5 mg./Kg. daily for children (in 4 divided doses).



SWIFT RELIEF OF SYMPTOMS

EFFECTIVE CONTROL OF "PROBLEM" PATHOGENS
(no significant resistance develops to this wide-range bactericide)

WELL TOLERATED, VIRTUALLY NONTOXIC

NORMAL BALANCE OF INTESTINAL FLORA PRESERVED
(no monilial or staphylococcal overgrowth)

From a Large Midwestern University:

FUROXONE CONTROLS ANTIBIOTIC-RESISTANT OUTBREAK

An outbreak of bacillary dysentery due to Shigella sonnei was successfully controlled with FUROXONE after a broad-spectrum antibiotic had proved inadequate. Cure rates (verified by stool culture) were 87% with FUROXONE, 36% with chloramphenicol. Only FUROXONE "failures" were those lost to follow-up. Chloramphenicol failures subsequently treated with FUROXONE responded without exception. FUROXONE was also used effectively as prophylaxis and to eliminate the carrier state. It was "extremely well tolerated in all 191 individuals who received it either prophylactically or therapeutically." Galeota, W. R., and Moranville., B. A.: Student Medicine (in press)

EATON LABORATORIES, NORWICH, NEW YORK

The Doctor Builds His Estate

Prepared for the readers of Clinical Medicine by the Research Department of the leading investment banking and brokerage firm of Bache & Co., 36 Wall Street, New York 5, New York

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These monthly articles point out one method by which the professional man may overcome the particular handicap imposed upon him by our tax structure, which taxes the bulk of his income at normal income tax rates, as opposed to the capital gains tax avenue open to many business men. One solution to this problem is the systematic investment of a portion of current income each year in securities. Such a program, which should include many different types of investments such as bonds, preferred stock, common shares and shares of mutual funds, will have as its objectives growth of principal together with reasonable income. We again emphasize that even the most complete series of articles of this type cannot take the place of consultation with a representative of a reputable brokerage firm.

There are more issues of securities traded over-the-counter than there are listed on all the national exchanges combined, but many investors hesitate to trade in this huge market because of their lack of knowledge of the field. Their uncertainty isn't too surprising, actually, since nobody really knows just how broad this market is, or the actual dollar volume of daily transactions.

A staff report to the Committee on Banking and Currency of the United States Senate—the so-called Fulbright Committee—in April, 1955 estimated that there are about 700,000 companies in the United States with one or more issues of stock outstanding, of which 90% are closely

held. In at least 20,000 issues, however, the report stated that there is enough public interest to cause some trading, and for 2500 to 3000 of these, an active market exists. In addition, the report noted, there are another 20,000 Federal, state and local issues with "at least a minimum market."

In general, the over-the-counter market includes brokers, investment bankers and dealers. The broker, as the name implies, acts exclusively on behalf of his customers in buying or selling securities for a commission paid him by the customer. An investment banker's primary function is to raise capital for existing or new facilities. Working closely with the investment banker is the "dealer," an all-important cog in the over-the-counter market's complex machinery, since he plays a major part in the primary distribution of securities. He does so by buying for his own account and selling directly to his customers. To simplify understanding of the over-the-counter market, it is convenient to think of a dealer as a merchant in securities, as others may deal in television sets or rugs.

It is in the marketing of securities that the dealer plays the most vital role—primary distribution. He helps create and maintain a market in stocks after their public distribution and sees to it that an orderly or continuous market is maintained, by providing buying and selling prices.

Of course, there are no tickers reporting price changes in the OTC market, unlike organized exchanges. However, investors can easily obtain up-to-the-minute quotations on any security traded over-the-counter by calling their brokerage firms. While the over-the-counter market has no fixed hours for trading, most trading houses will not give out a firm market before 10:00 A.M., and trading in the afternoon usually is over by 4:00 P.M. or 4:30 P.M., although trading will continue as long as traders are available. There is no central point of operation, with trades consummated through negotiation by teletype or telephone between dealers handling customers' orders and dealers who maintain a primary market in the issue in question. A dealer handling customers' orders, to consummate orders in three different securities, may well sell each one in an entirely different section of the country, depending on where he finds the best market.

One glance at the listing in your newspaper of over-the-counter prices will dispel the misconception that the OTC market lacks quality stocks. In fact, the securities of some of the nation's outstanding enterprises, such as Anheuser Busch, Dunn & Bradstreet, Eli Lilly, Time, Inc., American Marietta, Weyerhauser Timber, and many others are traded there. Many unlisted companies have paid consecutive dividends for many years. In addition to sharing the growth of the nation's industrial giants, of course the OTC market also provides the investor with an opportunity for buying shares in small local concerns.

This month, we are discussing three firms whose shares are traded over-the-counter, all of which appear attractive to us. The first, Witco Chemical, is enjoying a sharp improvement in earnings. The second, Spector Freight System, Inc., has a consistent growth pattern in trucking. The third, Northeastern Insurance Company, appears attractive for capital gains possibilities.

WITCO CHEMICAL

Witco Chemical this year is enjoying a sharp improvement in operating earnings which continues a long record of steady advances in sales and net income. For all of 1959 we estimate record sales of close to $50 million along with record operating earnings of approximately $2.75 per share on 759,000 shares outstanding. (This estimate excludes another 25¢ per share in undistributed earnings of non-consolidated affiliates). Last year, Witco reported sales of $40 million and earnings of $2.16 per share on 670,000 shares (excluding non-recurring income). Five years ago, Witco's sales were $20 million while operating earnings were $1.02 per share. In terms of growth in earnings per share available to the common stockholder, Witco's performance since 1954 has been vastly superior to the chemical group as a whole and we believe that this factor particularly should be evaluated more generously by the investing public.

Witco's sales are derived from four principal sources: roughly 30% from organic chemicals, 25% from detergents, 10% from asphalt products and 30% from carbon black.

Organic chemicals include a broad line of metallic stearates used for further chemical processing by many industries such as rubber, plastics, paints and others. Witco emulsifiers are well established for use primarily in agricultural chemical sprays. Also of increasing importance and interest are the company's special purpose polyesters used in the production of flexible and rigid urethane foams. This product is expected to find rapidly growing applications, especially in the automotive field where they are used in crash pads, sun visors and gasketing. Soon to come on stream is a new $3.5 million phthalic anhydride plant with 20 million pounds of annual capacity. This product is used in the manufacture of plasticizers and resins for the plastics and paints industry. For some time overcapacity and price weakness has characterized the phthalic anhydride market. Currently, however, demand is very strong and the price structure is likely to improve. In the last half of 1959 and into 1960, this important new facility should contribute satisfactory additional earnings.

In the detergents field, Witco produces finished synthetic detergents and detergent components and additives. Major customers include large supermarket chains which pack Witco detergents under private labels, the textile industry which buys in bulk and other soap and detergent manufacturers. Witco's position in the rapidly growing liquid detergent field is especially encouraging.

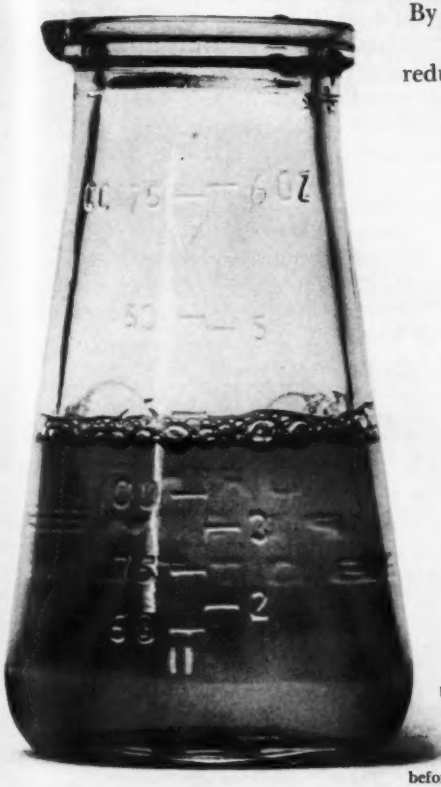
Asphaltic products are used in waterproofing, protective coating, electrical insulation, road paving, sealers and other applications. Demand for these products has increased appreciably in recent years and an expansion program was completed early in 1959.

The final 30% of Witco's sales is derived from the resale, under a long-term contract, of carbon black produced by the Continental Carbon Company in which Witco owns a 20.16% stock interest. (Continental Oil and Shamrock Oil are the remaining owners). The relationship between Witco and Continental is more than 25 years old and Witco officers occupy the presidency, vice-presidency and other offices of Con-

urinary discomfort, relieved within 30 minutes

The specific analgesic action of Pyridium provides rapid relief of pain, burning, urgency, frequency. By promoting more normal function, Pyridium reduces the risk of retention and pooled urine.

PYRIDIUM



PYRIDIUM®

brand of phenylazo-diamino-pyridine HCl

provides safe analgesia as long as may be required. AVERAGE DOSAGE: *Adults*, two tablets three times daily before meals. *Children, age 9 to 12 years*, 1 tablet three times daily, before meals. SUPPLIED: Tablets (0.1 Gm. each), bottles of 50, 500 and 1,000.

WARNER CHILCOTT
MORRIS PLAINS, N.J.

complements any anti-infective of your choice

WITCO CHEMICAL

Price	39-41	Capitalization (12/31/58)	
Dividend	$1.00	Common stock	759,122 shs.
Yield	2.5%		
Traded	O.T.C.		

tinental. Carbon black is used almost enclusively by the synthetic rubber industry. Continental's sales of 200,000,000 pounds in 1958 represented about 12% of domestic production. Currently, however, the company has large construction projects underway in the U.S., France and the Netherlands which will increase productive capacity by 50% by 1960. Witco, in addition to profits earned on the resale of carbon black, also receives dividends from Continental which currently approximate $250,000. Considering the steady, long-term prospects for growth in consumption of synthetic rubber products, and the large expansion of capacity now underway, Witco's opportunities for substantial increments to profits from these sources in the future appear excellent.

Witco's financial condition is strong. Current assets on December 31, 1958, were $11.7 million while current liabilities were $5.2 million. There is no debt outstanding and the company has more than $3.5 million in idle cash which it intends to use for further capital expansion or the acquisition of another chemical company if and when the proper opportunity arises.

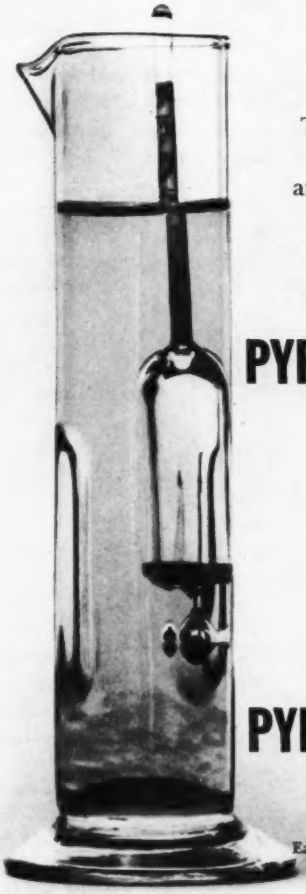
Currently selling at approximately 14 times estimated fully consolidated earnings in 1959, the shares of Witco appear quite reasonably priced relative to other comparable companies in the chemical industry which command multiples or 20 times or better. Witco's earnings record is superior to a majority of these other companies, and its long-term prospects seem no less promising. Considering also the substantial additions to productive capacity now in the works and the potential value of presently idle cash, earnings in 1960-62 are likely to post further satisfactory gains. Accordingly, we recommend purchase of Witco for intermediate and longer-term capital gains.

SPECTOR FREIGHT SYSTEM, INC.

Spector Freight System, Inc. is a regulated common carrier of general commodities operating from Kansas on the west to Massachusetts on the east. In addition, it is authorized to serve the following midwestern and eastern states: Missouri, Iowa, Nebraska, Minnesota, Wisconsin, Illinois, Indiana, Ohio, Pennsylvania, New York, New Jersey, Connecticut, Rhode Island, Maryland, Delaware and the District of Columbia.

While the company's direct service is limited to the territory indicated, it has provided trans-continental service since 1953 by interchange of trailers at either St. Louis or Chicago with Pacific Intermountain Express Co. It also interchanges cargo with other motor carriers either by direct transfer or by interchange of trailers. In addition to the regular runs made daily between points at relatively

controls acute urinary tract infection and pain



It takes two therapies to assure fullest symptomatic and infection control, and Pyridium Tri-Sulfa provides them both in one ℞ for your convenience. The Pyridium component allays the pain, burning, urgency and frequency within 30 minutes ... while the classic triple-sulfa provides prompt therapeutic blood levels, often with the first dose, to control the infection.

PYRIDIUM TRI-SULFA

PYRIDIUM® TRI-SULFA

phenylazo-trisulfapyrimidine

DOSAGE: *Adults*—first day, 2 tablets four times daily. Then 1 tablet four times daily.

SUPPLIED: Bottles of 30 tablets.
Each tablet contains: Pyridium® (Brand of phenylazo-diamino-pyridine HCl) ... 150.0 mg.;
Sulfadiazine ... 167.0 mg.;
Sulfamerazine ... 167.0 mg.;
Sulfamethazine ... 167.0 mg.

WARNER CHILCOTT
MORRIS PLAINS, N.J.

1 tab. q.i.d....rapid analgesia...high sulfa blood levels

short or intermediate distances from one another, the company also operated 75 long-haul relay runs (changing drivers at relay points) both westbound and eastbound and 44 sleeper cab runs (two drivers alternating at the wheel) in each direction. Additional service is provided as shippers may require, and extra leased equipment is used on occasion to supplement the equipment owned and regularly leased by the company. The regular service operates on fixed schedules which are strictly adhered to. Typical running time on the sleeper cab operation from New York to Chicago, for example, is 28 hours. Merchandise arriving in Chicago by midnight is transferred to city trucks for delivery the following morning.

Terminal facilities are to a very large extent the key to the company's operations. At present Spector operates 28 terminals located at key areas of their operations. This terminal organization is divided into Eastern and Western regions under the direct supervision of the Regional Vice Presidents. All terminal and relay points are connected through leased teletype systems to the Operations Control Center in Chicago, and schedules are supervised from this center by the Director of Dispatching. Constant reporting by the terminals and relay points of all equipment movements makes it possible to maintain close control of the complete line haul operations and to dispatch specialized equipment to areas where needed, or to shift power facilities according to requirements. Each terminal has its own sales force, operating under the direction of the terminal manager. The majority of terminals are leased.

Terminal locations include most of the major Great Lakes ports south of Lake Superior. With the opening of the St. Lawrence Seaway the development of the substantial foreign commerce over the Great Lakes route, the Company anticipates a growing interchange of water-borne and truck-borne freight movement at these points.

Long distance freight movement has been facilitated by co-ordiation of truck and rail services. In periods of heavy traffic substantial use is made of the railroads, as the Company routes 10% to 12% of its tonnage over rails for the major portion of its long hauls. This makes for a flexible operation and enables Spector to meet temporary peak demands without increasing its own equipment or personnel. Combination rail-truck service is principally of two types: (1) piggy-back, in which trailers are loaded aboard railroad flat cars for trips of several hundred miles, tractor power units taking over the final haul to terminal or customers; and (2) the use of removable containers which can be loaded interchangeably on a railroad flat car or on a flat-bed trailer unit.

Because Spector's business is broadly diversified, changes in movement of individual commodities have relatively little effect on the total volume of freight carried. It is interesting to note that no single customer accounted for more than 2% of the company's gross revenue. Freight carried in 1958 was made up of approximatly 52% in truck loads (TL) and 48% in less-than-truck loads (LTL). LTL freight, while requiring more handling, is more profitable.

Spector carries on a continuous research and development program. This work is principally in the fields of equipment desgin, terminal facil-

manages chronic/recurrent g.u. infections better

When other agents fail because of resistance or sensitization, Mandelamine succeeds. Its effect is confined solely to the urinary tract, for direct bacteriostatic and bactericidal action at the site of infection. Mandelamine is truly antibacterial, not antibiotic, and is effective against the common urinary tract pathogens, particularly those of a chronic or antibiotic-resistant nature.

MANDELAMINE®

brand of methenamine mandelate

DOSAGE: *Adults*—average dosage is 2 Hafgrams four times daily. *Children over 5*—1 Hafgram, four times daily. *Children under 5*—1 teaspoonful Mandelamine Suspension four times daily.

SUPPLIED: Hafgrams® (0.5 Gm. tablets) in bottles of 100, 500 and 1,000; 0.25 Gm. tablets in bottles of 120, 500 and 1,000; also pleasantly flavored Mandelamine Suspension for children in 4 and 16 fl. oz. bottles. Each 5 cc. teaspoonful contains 250 mg. methenamine mandelate.

WARNER CHILCOTT
MORRIS PLAINS, N.J.

resistance-free...nonsensitizing...low cost therapy

SPECTOR FREIGHT SYSTEM, INC.

Approximate price, Cl.A	16½	Capitalization (6/20/59)	
Dividend	68¢	Long-term debt	$7,408,321
Yield	4.1%	Class A	313,616 shs.*
Traded	O.T.C.	Class B	662,547 shs.*

*The Class A Common stock is entitled to cash dividends at three times the rate per share paid on the Class B Common stock. The Class B is convertible into Class A share for share, subject to limitations which terminate January 1, 1963. Except for dividend and conversion features the two classes of stock are identical.

ity, freight handling and time studies for establishment of production standards. Currently Spector is making traffic tests in certain states involving the use of "double bottoms," i.e., two trailers drawn by a single power unit. If an arrangement can be worked out on a basis satisfactory both to toll road management and the truckers (as is already the case in the west), the company believes that worthwhile economies would result for both carriers and the public.

Spector uses the declining balance method for depreciating equipment for tax purposes, which is the general practice of the industry. This method of depreciating equipment has a tendency to defer tax liability, but is of no great consequence provided that new equipment is constantly being purchased. In any case, in anticipation of deferred tax payments, Spector has set up a reserve which their accountants deem adequate to meet such contingencies, and the company is actually purchasing new equipment in excess of its depreciation, 60 new refrigerated trailers having just been added in July. The average age of the company's equipment is reported to be around 2 years old.

Spector's growth pattern has followed that of the industry with gross revenues increasing from $6 million in 1948 to $43.4 million in 1958. Net worth for the same period increased from $183,000 to more than $5 million. Earnings were reported at 81¢ for the twenty week period ended May 23rd, compared to 34¢ last year, and for the full year 1959 are estimated at between $1.70 and $2.00 per share on the combined Class A and B shares. The company's operating ratio from January 1 to June 20 was 94.4% which shows an improvement over 95.9% reported for last year. The Class A stock was initially offered to the public in May of 1959 at 11⅛. Of the 200,000 Class A shares offered. 140,000 shares were sold on behalf of the company and 60,000 shares on behalf of certain shareholders; and the Class B remains closely held. The directors recently declared a 17¢ quarterly dividend on the Class A stock. Based on indicated earnings the Class A stock is, in our opinion, still reasonably priced despite the sharp advance and an attractive vehicle through which to participate in this "growth industry."

NORTHEASTERN INSURANCE

Northeastern Insurance confines

Year	Net Investment Income (per share)	Statutory Underwriting (per share)	Federal Taxes (per share)	Reported Earnings (per share)	Unearned Prem. Equity (per share)	Total Adjusted Earnings (per share)
1958	$0.94	—1.15	0.42	0.21	0.92	1.13
1957	0.98	—0.07	—0.18	0.73	—0.86	—0.13
1956	0.95	—1.68	0.73	—	0.15	0.15
1955	0.84	1.40	—0.97	1.27	0.12	1.39

underwriting actviities to the handling of fire, allied lines, marine, hail, full coverage automobile and fidelity and surety *reinsurance acceptances.* It is licensed in Canada and fourteen states.

Premium volume in 1958 amounted to $11,216,000 and was distributed as follows: fire, $3,839,000; extended coverage, $1,563,000; growing crops, $519,000; ocean marine, $491,000; inland marine, $364,000; Automobile bodily injury, $1,510,000; automobile physical damage, $1,586,000; automobile property damage, $927,000; and all other $417,000. Premium growth has been fair. Last year it increased 18.4%, in the past five years 36.1% and in the past ten years 147.8%. Not much change is anticipated this year in premium volume.

With the exception of 1956 and 1957 underwriting experience had been satisfactory. In the 1951-1955 period, for example, the combined loss and expense ratio was 96.5%. Last year the cycle reversed itself and underwriting was in the black. This year further improvement is anticipated. In the first quarter, traditionally the worst, the combined loss and expense ratio totaled 103.7%, an improvement of 6 percentage points from the 109.7% in the first quarter of 1958. The troublesome line was fire insurance; however, this line is expected to correct itself shortly and produce satisfactory results for the full year. Particularly gratifying were the results in the automobile lines which in recent years have been unprofitable. The auto ratio dropped a full 9 points to 94% in the first quarter from 103% in the similar period of 1958.

Reported book value as of December 31, 1958 was $18.14 a share, an increase of $5.57 over the $12.57 in 1957. Adjusted book value as of year end, including the equity in the unearned premium reserve was $27.22 a share. As of April of this year book value rose to $20.60 a share and adjusted book value to a little over $31 a share. A good portion of the increase both last year and this year can be attributed to the sharp market rise in United Service Life in which Northeastern has a large holding.

United Services issues insurance upon the lives of Commissioned and Warrant officers of the Uniformed Services of the United States and members of their families, as well as to Reserve, National Guard and former officers.

United Services' growth record is

Year	Life Insurance In Force (millions)	% Gain of Life Insurance In Force Over Previous Years	Life Insurance Written (millions)	Adjusted Earnings (per share)
1954	$143.9	18.5%	$29.9	$1.17
1955	175.9	22.3	39.2	1.71
1956	217.6	23.7	49.7	2.32
1957	280.9	29.2	77.0	3.31
1958	347.7	23.8	83.5	3.81
1959 (Est.)	415.0	19.1	90.0	4.50

outstanding as the above table clearly indicates.

For 1959, the company is estimating sales of $90 million and total insurance in force of $410-$420 million. So far, United Services has gotten off to an excellent start with sales in the first three months increasing to $22 million from $19 million in the similar period last year.

Earnings also should increase to aproximately $4.50-$4.65 a share—that is if mortality stays relatively stable. The above earnings have all been adjusted by management to take into account the new proposed Federal tax on life insurance companies. Furthermore, management is of the opinion that reported earnings are conservatively stated. There are 600,000 shares outstanding of which Northeastern owns 45,000. Thus behind every 100 Northeastern shares there will be 15 shares of United Services Life.

The current dividend rate for Northeastern is 33⅓¢ annually. A dividend of $0.25 is paid on February 15th and $0.08⅓ on August 15th. The dividend represents a 35% payout of net investment income and 10% of par value of $3⅓. At the present the company is limited in the amount it can pay out by New York State, which is an important premium producing state. Whereas Northeastern carries its holding of United Services at $1,905,000 ($127 a share), New York States values it at about $200,000 causing a sharp reduction of $1,500,000 in surplus.

The New York State formula as to what percentage payout of surplus is permissible uses the revised capital and surplus figures and thus it limits the payout. However, the company feels that a few good underwriting years would build capital and surplus to permit a higher payout.

There are approximately 1,750 stockholders. Financial control, however, is held by National Industrial Credit Corp., which in turn is owned by Financial General Corp. Voting control of the latter corporatoin is held by the Equity Corporation. The Equity group has owned the majority stock (182,824 shares at year-end) since 1949. The same group also controls the United Services Life Insurance Company.

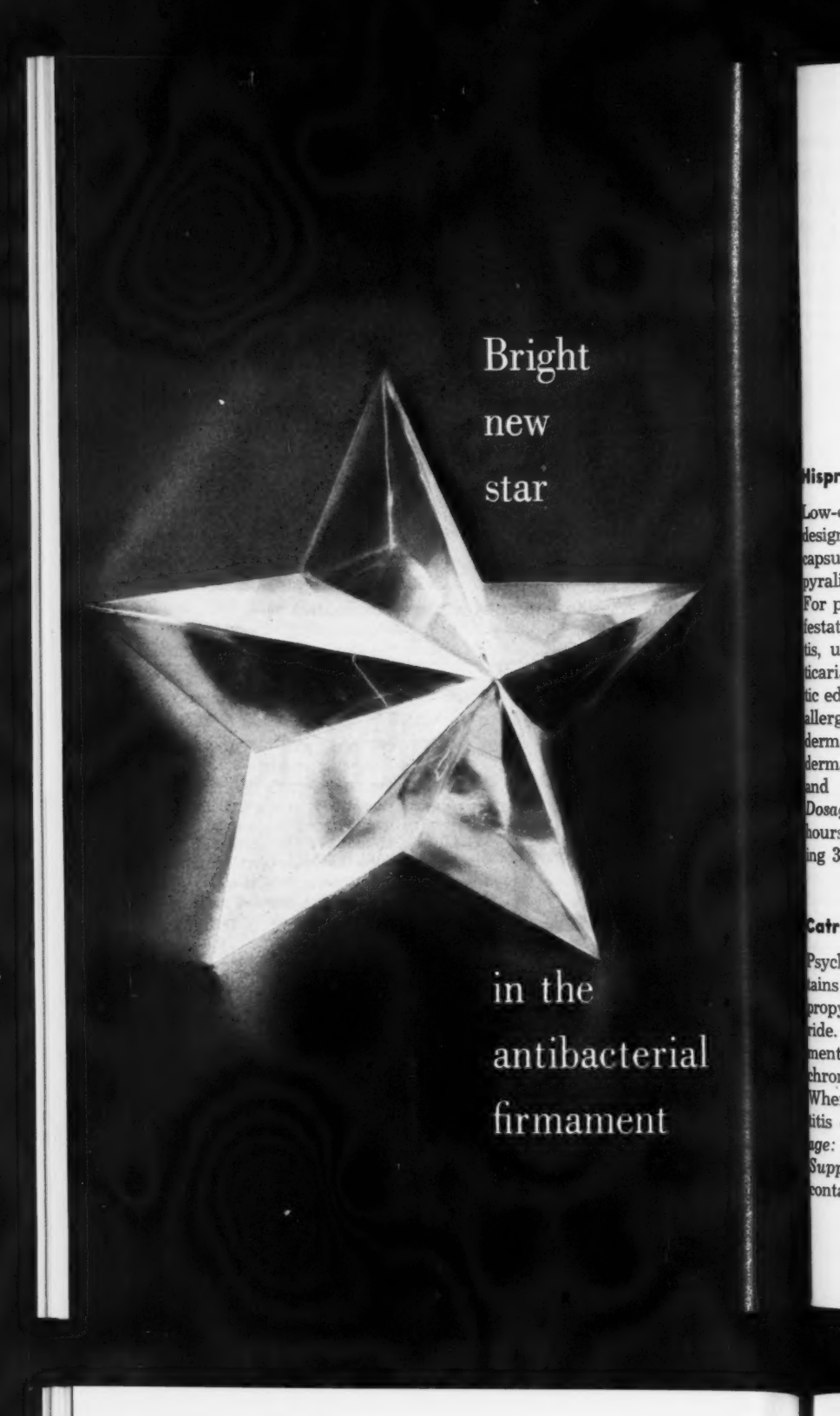
The shares of Northeastern Insurance at current levels appear attractive for capital gain possibilities based on an improved underwriting outlook and Northeastern's large holdings in

NORTHEASTERN INSURANCE

Price	15½
Dividend	33⅓¢
Yield	2.1%
Traded	O.T.C.

Capitalization (12/31/58)
Common stock ..... 300,000 shs.

United Services Life Insurance. Underwriting improved considerably last year with the combined loss and expense ratio dropping 3.6 points to 99.8 from 103.4 in 1957 and 104.7 in 1956. Also adding considerable appeal is the holding in the fast growing United Services Life Insurance Co. which at present amounts to $7.25 a Northeastern share. The only drawback to the situation is the limitation on dividend payout by the New York State Department of Insurance. However, it is our opinion that this situation will correct itself in the next few years. What's more, in the meantime stockholders not interested in current income have an attractive vehicle for increasing equity value and, of course, ultimately capital gains possibilities.◄


Bright
new
star
in the
antibacterial
firmament

Hispril Spansules, 5 mg. *(S.K.F.)*

Low-dose antihistamine in capsules designed for sustained release. Each capsule contains 5 mg. of diphenylpyraline hydrochloride. *Indications:* For prolonged relief of allergic manifestations in hay fever, allergic rhinitis, upper respiratory infections, urticaria, allergic eczema, angioneurotic edema, insect bites, food and drug allergies, serum reactions, contact dermatitis, poison ivy and poison oak dermatitis, allergic migraine, asthma and drug-induced nasal stuffiness. *Dosage:* Adults, one capsule every 12 hours. *Supplied:* In bottles containing 30 capsules.

Catron *(Lakeside)*

Psychoactive agent. Each tablet contains 3 mg. *or* 6 mg. of beta-phenylisopropyl hydrazine as the hydrochloride. *Indications:* For the management of depression associated with chronic diseases. *Contraindications:* Where there is a history of viral hepatitis or other liver abnormality. *Dosage:* As directed by the physician. *Supplied:* Either strength, in bottles containing 50 tablets.

Altafur *(Eaton)*

Available in two strengths: Each tablet contains either 50 mg. *or* 250 mg. of furaltadone, a synthetic antibacterial agent. *Indications:* In the treatment of a variety of bacterial infections caused by certain Gram-negative and Gram-positive organisms, including pneumonia, septicemia, wound infections and osteomyelitis. *Dosage:* Determined on the basis of age, body weight and severity of disease. *Supplied:* Either strength, in bottles containing 20 or 100 tablets.

Gammacorten *(Ciba)*

Each tablet contains 0.75 mg. of dexamethasone, a low-dosage corticosteroid. *Indications:* For the treatment of arthritis, severe asthma, allergy and dermatitis—all in conditions which respond to adrenocorticoid therapy. *Contraindications:* Active, latent or questionably healed tuberculosis, other acute or chronic infections, recent intestinal anastomoses, diverticulitis, ocular herpes simplex, thrombophlebitis. *Dosage:* To be determined by the physician. *Supplied:* In bottles containing 50 tablets.

Effergel *(Stuart)*

Effervescent carboxymethylcellulose bulk laxative. *Indications:* For the relief of constipation due to decreased intestinal motility and hardness and lack of bulk in the intestinal contents. *Dosage:* Adults, 1 rounded teaspoonful in a glass of water morning and night. Dosage to be adjusted to suit individual needs. *Supplied:* White granular powder in 4 ounce and 9 ounce bottles.

Provera Tablets *(Upjohn)*

Available in two strengths. Each tablet contains 2.5 mg. or 10 mg. of medroxyprogesterone acetate. *Indications:* In threatened and habitual abortion, infertility, dysmenorrhea, secondary amenorrhea, premenstrual tension and functional uterine bleeding. *Dosage:* As directed by the physician. *Supplied:* Either strength, in bottles of 25 tablets.

Desitin HC Suppositories *(Desitin)*

Each hemorrhoidal suppository contains 10 mg. of hydrocortisone (as the acetate), Norwegian cod liver oil, lanolin, zinc oxide, bismuth subgallate, and balsam peru, in a cocoa butter base. *Indications:* To alleviate inflammation, itching, edema, pain and allergic symptoms and to promote healing in severe, acute and chronic inflammatory internal hemorrhoids (non-surgical), proctitis, cryptitis, inflamed postoperative scar tissue, and internal anal pruritus. *Dosage:* One suppository inserted two times daily for up to six days, or as required. *Supplied:* In boxes of 12 foil-wrapped suppositories.

Tral Injectable *(Abbott)*

Anticholinergic, each ampoule containing 10 mg. of the active constituent in isotonic solution. *Indications:* For the management of gastrointestinal conditions where there is an acute "flare-up" of symptoms. For relief of severe pain associated with peptic ulceration, severe colic and spasm of the intestinal smooth muscle, and diarrhea leading to dehydration. *Contraindications:* Patients with glaucoma or pyloric stenosis. Use with special caution in patients with serious cardiac disease or prostatic hypertrophy. *Dosage:* As determined by the physician. *Supplied:* In individual ampoule cartons and cartons of five ampoules.

Vistaril Oral Suspension *(Pfizer)*

Each 5 cc. teaspoonful contains 25 mg. of hydroxyzine pamoate. *Indications:* For the treatment of tension and anxiety, psychomotor agitation and psychoses, cardiac arrhythmias and certain dermatoses. Also useful as supplementary therapy in some gastrointestinal disorders. *Dosage:* For oral administration. Dosage level should be individualized according to patient's condition and response. *Supplied:* In one pint amber bottles.

Madribon Pediatric Drops *(Roche)*

New dosage. Each cc. contains 250 mg. of *Madribon* for pediatric use. *Indications:* For the treatment of upper respiratory and other infections in infants and young children. *Dosage:* As directed by the physician. *Supplied:* In 10 cc. plastic containers with a special top for dispensing uniform drops.

IN NAUSEA AND VOMITING OF PREGNANCY

Pramilets *(Abbott)*

Phosphorus-free prenatal supplement. *Indications:* In pregnancy and lactation, provides comprehensive vitamin-mineral support. *Dosage:* Usual adult dose, one or more *Filmtabs* daily, or as directed by the physician. *Supplied:* In bottles containing 100 or 1000 *Filmtabs.*

Disomer Tablets *(White)*

Histamine antagonist. Each tablet contains 2 mg. of dexbrompheniramine maleate. *Indications:* In the treatment of allergy. *Dosage:* One tablet four times daily. *Supplied:* In bottles containing 100 tablets.

Casakol *(Upjohn)*

Fecal softener and mild laxative. Each capsule contains 250 mg. of poloalkol (oxyethylene oxypropylene polymer) and 30 mg. of casanthranol. *Indications:* For the treatment of chronic constipation. *Dosage:* As directed by the physician. *Supplied:* In bottles containing 16 or 100 capsules.

Tigan Pediatric Suppositories *(Roche)*

New dosage form. Indications: For the prevention and control of most clinically significant types of nausea and vomiting. *Dosage:* As directed by the physician. *Supplied:* In packages of six suppositories.

Temptee-Tabs *(Bryant)*

Chewable multivitamin tablet for pediatric use. *Indications:* Dietary supplement. *Dosage:* As directed by the physician. *Supplied:* As 40 individually foiled tablets, and in 100 or 250 tablet re-useable apothecary jars.

Moloy's Evaluation of the Pelvis in Obstetrics

by Charles M. Steer, M.D., Med. Sc.D., F.A.C.S., F.A.C.O.G., Associate Professor of Clinical Obstetrics and Gynecology, College of Physicians and Surgeons, Columbia University, and the Sloane Hospital for Women. Second edition. W. B. Saunders Company, Philadelphia. 1959. $4.00

Further studies made on the pelvis in obstetrics, which were begun by Doctor Moloy and the present author and completed by the latter after Dr. Moloy's death, and the total result is here reported. These studies now make possible a complete presentation of the subject—the various types of pelvis, methods of recognizing them, and their effect upon the mechanism of labor. The outcome of labor in various degrees of disproportion is discussed in detail. The short section on forceps in the first edition has given place to a section on the influence of pelvic shape in the management of obstructive labor. This book is offered, not to replace but to supplement, standard textbooks of obstetrics.

Preventive Medicine: Principles of Prevention in the Occurrence and Progression of Disease

edited by Herman E. Hilleboe, M.D., Commissioner of Health, State of New York, Department of Health, Albany; and Granville W. Larimore, M.D., Deputy Commissioner of Health, State of New York, Department of Health, Albany. W. B. Saunders Company, Philadelphia. 1959. $12.00

Certainly an ambitious title. But the quality of those responsible for the work, and presumably for the title, is such as to make one disposed think it not over-ambitious. Part I, on prevention of occurrence has chapters on potable waters, milk-borne illness, waste disposal, food poisoning, air pollution, insect vectors, ionization radiation, medical defense against atomic attack or natural disaster, accident hazards, hygiene of housing, and occupational health. Section B deals with prophylactic measures against bacterial diseases, virus diseases, rickettsial, fungus, parasitic, and venereal diseases.

Other sections treat of nutrition, obesity, the maternity cycle and the

newborn period, preventive health services in childhood, dental health. There are chapters on periodic health inventory, cancer detection, tuberculosis, heart disease, diabetes, hearing and visual defects. Rehabilitation has a section, as has alcoholism, and narcotic addition. To complete the list, health education, patient education, and postgraduate education for physicians are supplied.

Insulin Treatment in Psychiatry

edited by Max Rinkel, M.D., Boston, and Harold E. Himwich, M.D., Galesburg, Illinois. Proceedings of the International Conference on the Insulin Treatment in Psychiatry, held at The New York Academy of Medicine, October 24 to 25, 1958. Philosophical Library, Inc., New York. 1959. $5.00

Apparently insulin treatment of psychiatric disorders has lost much of its original popularity. The contents of this book, carrying the proceedings of the International Conference on the subject, show that a great number of psychiatrists still find this treatment of great value. It is assumed that insulin therapy in schizophrenia is so firmly established that there is little reason for reappraisal of its value. Psychiatrists and teachers of psychiatry participating in this conference came from Austria, South America, England and Canada; from the Universities of Pennsylvania, California, Harvard, Michigan, Columbia; and from the United States Public Health Service, the Allan Memorial Institute of Psychiatry, the Institute of Living, of Hartford, and from a dozen or so other of the great psychiatric institutes—all testifying to the continued value of this almost entirely harmless means of treatment of psychiatric diseases.

The Degenerative Back and Its Differential Diagnosis

by P. R. M. J. Hanraets, M.D., Neurosurgeon, St. Ursula Clinic, Wassenaar, The Netherlands. Elsevier Publishing Company, Inc., Princeton, New Jersey. 1959. $19.95

This book purports to set forth details, general information and inferences, digested and presented in palatable form, though comprehensive, the present knowledge of this important and prevalent group of conditions. At a glance the discerning doctor will be pleased to note the major divisions:

Part I—Points of Enquiry. Statement of the Problem

Part II—Some Results of Points of Enquiry Set Forth in Part I. The Literature

Part III—Further Results of Points of Enquiry Set Forth in Part I. Our Own Material and Possible Inferences

Every reader will be glad to learn what is said in the chapter—Constitution in a General Sense, Significance of Abnormal Movements, The Degenerative Back as an Aspect of the Degenerative Human Being, and The Effects of Trauma on the Interverterbral Disc.

There are some 25 brief summaries of sections or chapters and 10 pages of final summary and conclusions. A comprehensive bibliography, and an excellent subject index conclude a book which leaves nothing to be desired.

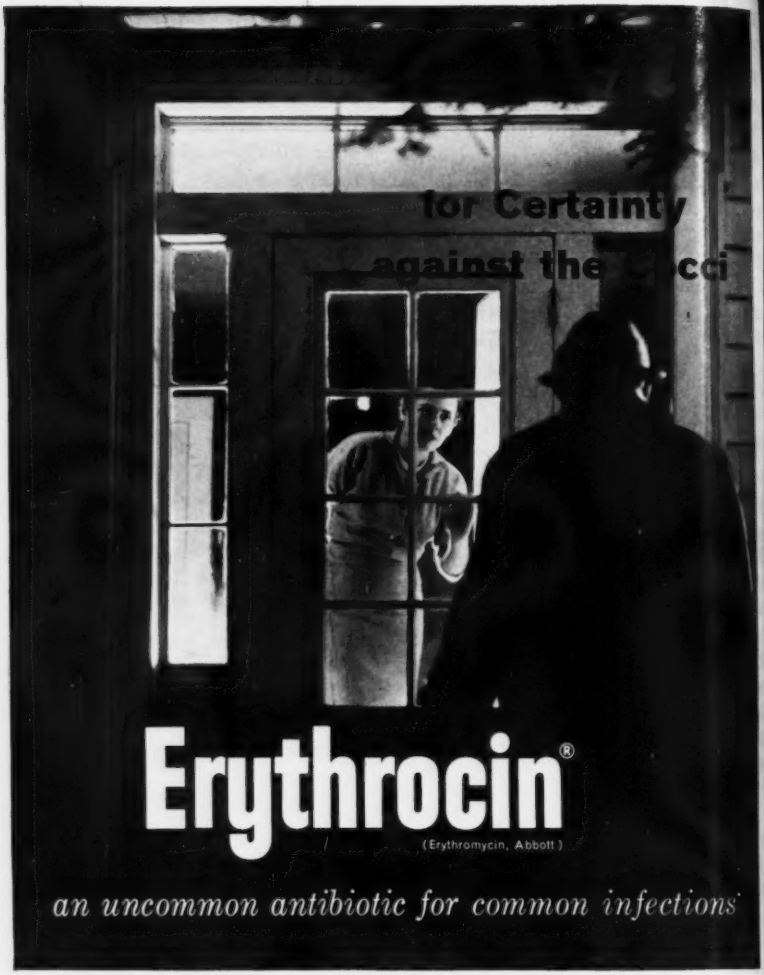
Pathologic Physiology of Oral Disease

by Richard W. Tiecke, D.D.S., F.A.C.D., Professor of Pathology, Northwestern University Dental School; Orion H. Stuteville, D.D.S., M.D.S., M.D., Professor and Chairman of the Department of Maxillofacial Surgery and Chairman Department of Oral Surgery, Northwestern University Dental School and Joseph C. Calandra, M.D., Ph.D., Professor and Chairman of the Department of Pathology, Medicine and Bacteriology, Northwestern University Dental School, with 637 illustrations. The C. V. Mosby Company, St. Louis 3. 1959. $11.50

Up to some 50 years ago the majority of internists went into that large field of medicine through the door of pathology. A great many thoughtful physicians and surgeons believe that this practice should have been continued. The preface tells us that a thorough knowledge of pathology is important to the medical and dental student and the practitioner for his understanding of disease processes involved in oral structures, and it emphasizes the dentist's contribution to patient health beyond the care of local tissue disease. A dozen specific inflammatory oral lesions are listed, a few less lesions in the oral cavity caused by viruses, a good many more under allergy and oral changes due to drug therapy. Under oral manifestations associated with metabolic deficiency changes, more than a score of pathological states are dealt with; under oral manifestations of blood diseases nearly as many. A particularly interesting and instructive chapter discusses several conditions as normal structures mistaken for oral disease processes.

Comment so far has got only through chpater 7 and 122 pages. The remaining 19 chapters and 344 pages discuss in great elaboration a proportional number of cases which may be properly classified and discussed in a book of this title.

This is the first book of this character to come under the eye of this reviewer. His opinion is that it is a book well worth the purchase and study of any practitioner of medicine or dentistry.



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